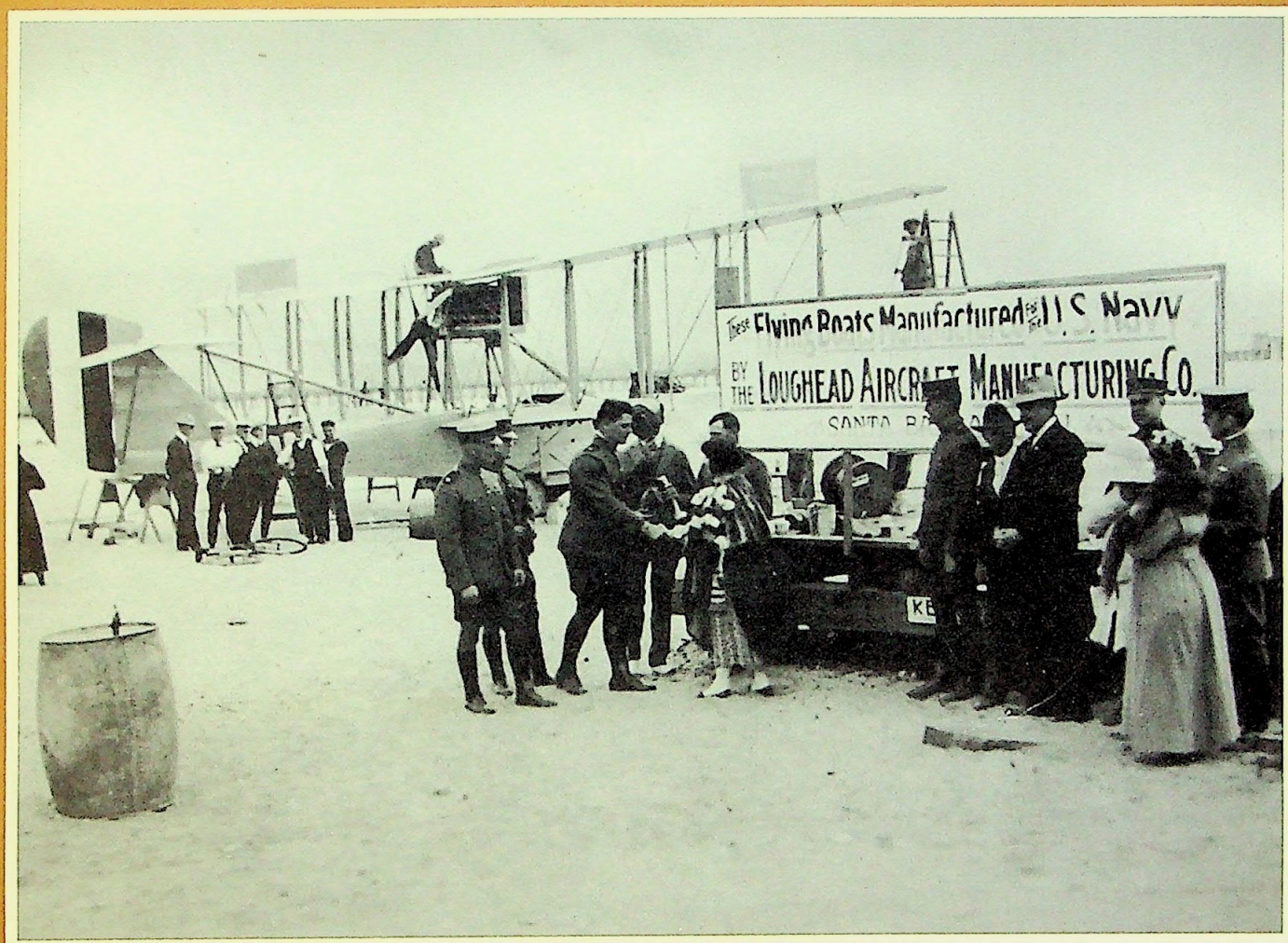


Dateline Lockheed



Dateline Lockheed



1932-1982

These dates bracket the first 50 years of today's Lockheed Corporation, but its fore-runners reach back another two decades. In 1918, the Loughhead Aircraft Manufacturing Company made its first military sale to the U.S. Navy. Delivery of one of the air-

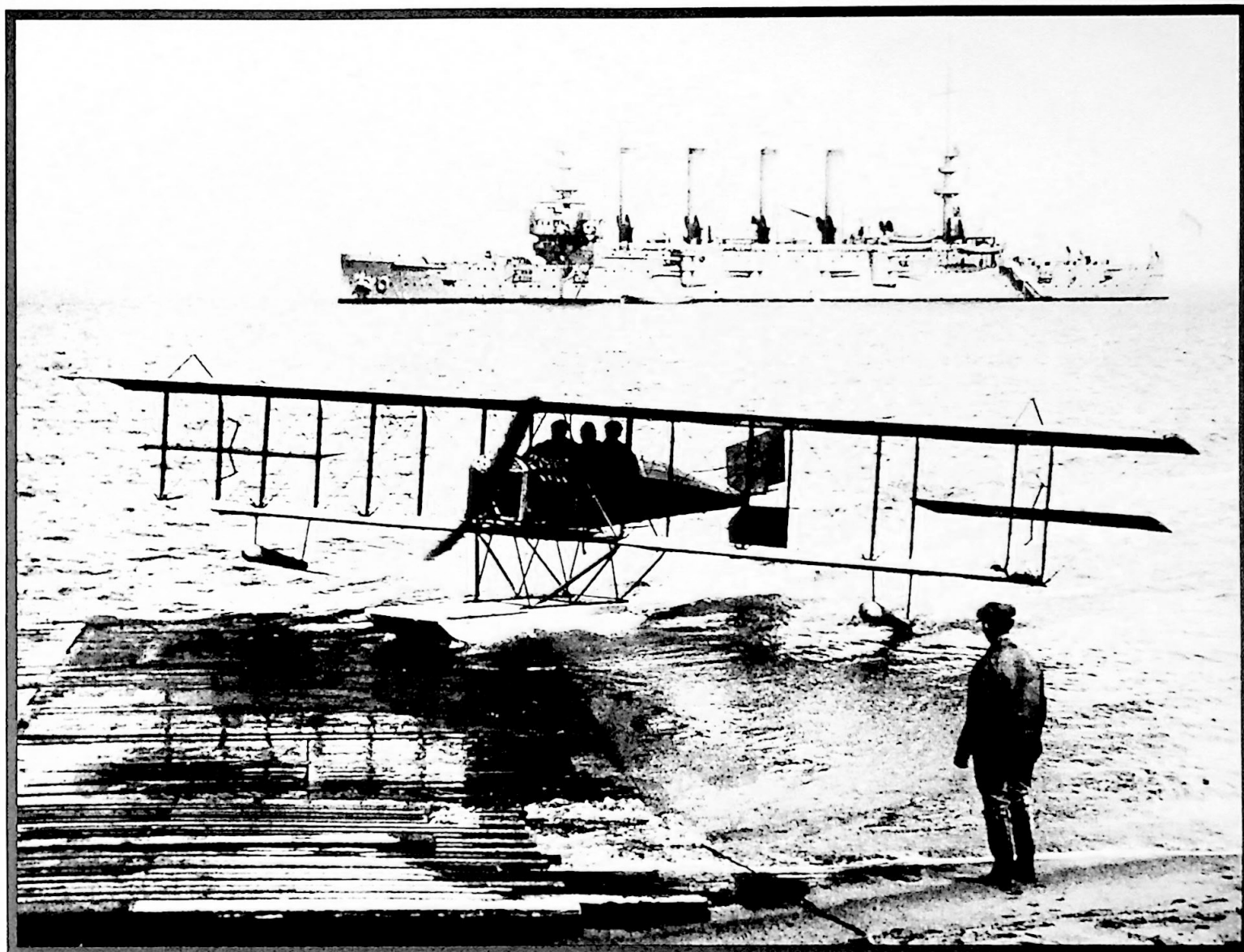
craft was memorialized in the above photo. The Loughhead company folded, to be revived with the name of its original founders spelled phonetically. That name soared with pioneering pilots such as Amelia Earhart and Wiley Post. When Robert Gross and his associates

bought Lockheed out of receivership in 1932 they got little more than a famous name. But added substance was to come. The first 50 years had begun. This book was published for Lockheed employees in honor of those 50 years.

*Dateline Lockheed is dedicated to the memory of
Courtlandt S. Gross.*

*Many of the events in this book bear the
stamp of his leadership.*

Forerunners: Flight of the first Lockheed



Jun 15 1913

A wood and fabric seaplane built in a garage made its first two flights over San Francisco Bay, inscribing a new name on the roll of aviation pioneers. Allan and Malcolm Loughead (pronounced, and later spelled, Lockheed) called their inven-

tion the Model G Hydro-Aeroplane. During the Panama-Pacific Exposition in San Francisco the brothers charged tourists \$10 for ten-minute rides in their aircraft. Later they moved the Model G to Santa Barbara where they established the Loughead Aircraft Manufacturing

Company in 1916. After Malcolm left to develop automotive brakes, Allan and several associates founded the Lockheed Aircraft Company.

Forerunners: Lindbergh chooses the Sirius



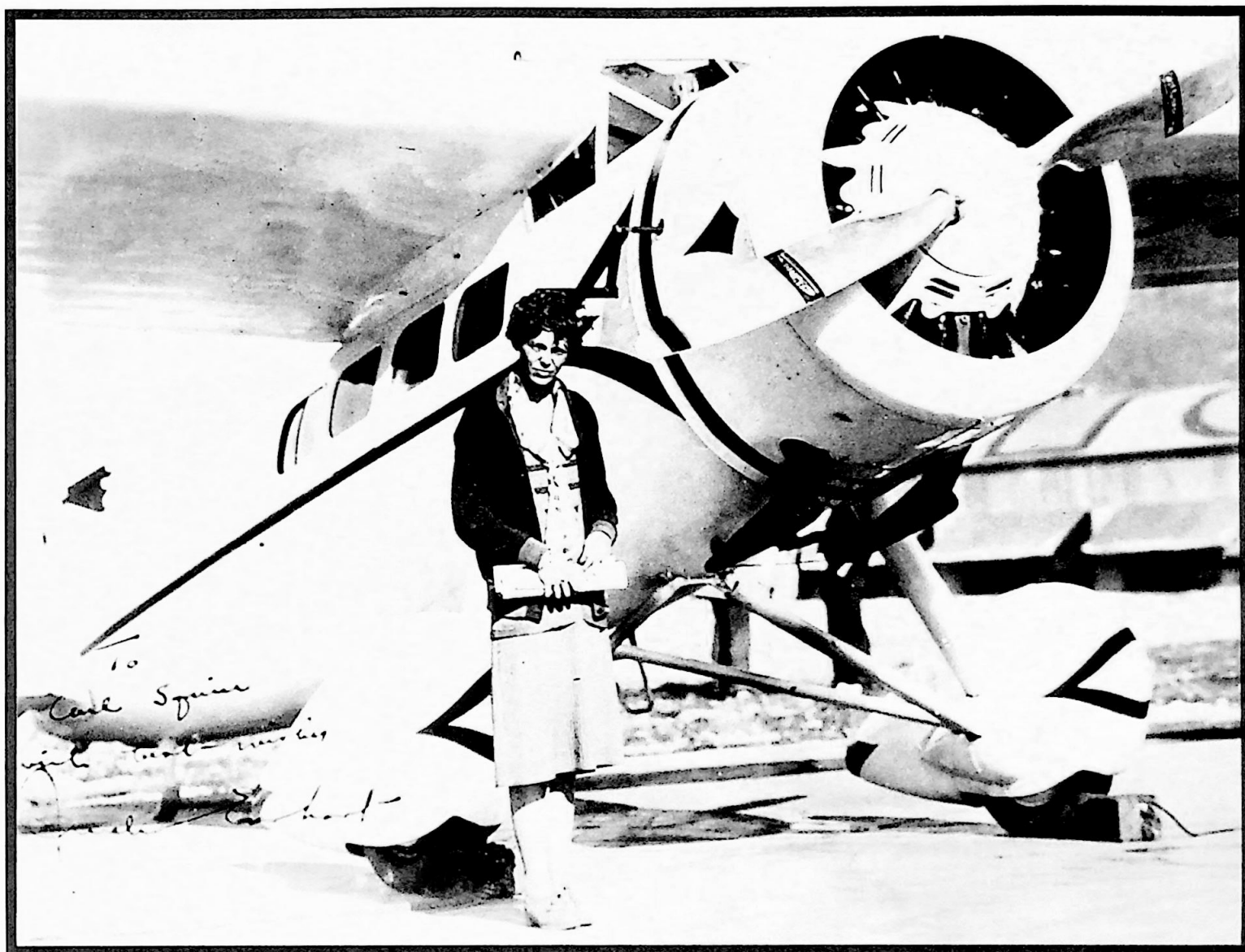
Apr 20 1930

Charles and Anne Lindbergh, bundled in electrically heated flying suits, took delivery of a Lockheed Sirius. On hand were (from left) Carl Squier, general manager of Lockheed under Detroit Aircraft's ownership; a representative of Detroit Aircraft; and Jerry Vultee, then

Lockheed chief engineer. On that day the Lindberghs flew their new plane from Glendale, Calif., to New York City and unofficially set a speed record in the process. The following year, the couple piloted a Sirius fitted with floats from Washington, D.C., across the Bering Sea to a

landing in Tokyo Bay. Next, they flew across four continents in a 29,000-mile survey of potential air routes. During a stop in Greenland, a native gave the Sirius a new name when he painted on it, "Tingmissartoq," meaning "The one who flies like a big bird."

Forerunners: Vega earns fame for Earhart, Post, Wilkins



May 21 1932

Amelia Earhart landed her Lockheed Vega in a meadow near Culmore, Northern Ireland, completing the first transatlantic solo flight by a woman. Her feat was just one of many aviation milestones set by the Vega:

Explorer George Hubert Wilkins flew Vegas to the North and South Poles; Wiley Post set two around-the-world records in his Vega, the "Winnie Mae." While the Vega was flying high, the Lockheed Aircraft Company was floundering. Detroit Aircraft Company, which had

bought Lockheed in 1929, slipped into bankruptcy, pulling Lockheed with it. Lockheed was in receivership by the time Earhart landed in Ireland.

A new Lockheed is born



Jun 6 1932

A group of entrepreneurs led by Robert E. Gross bought the assets of the Lockheed Aircraft Company, rescuing one of the famous names in aviation from receivership. The new company was incorporated on June 21, 1932. The new management could hardly have imagined

that over the next 50 years the Lockheed name would appear on 35,000 aircraft, 2,000 ballistic missiles, 44 ships, and innumerable other military, civilian, space, and ocean systems. Some of those managers sat for a photograph little more than two years after the new

Lockheed was incorporated: (from left) Ronald King, assistant treasurer; Carl Squier, vice president-sales; Lloyd Stearman, president; Gross, board chairman and treasurer; Cyril Chappellet, secretary; and Hall Hibbard, vice president and chief engineer.

Electra carries Lockheed into new era



Feb 23 1934

The first aircraft built by the new Lockheed made its maiden flight. The Model 10 Electra was a radical departure from the single-engine aircraft Lockheed had been producing. As the story goes, Lockheed Chairman Robert Gross decided to build the

Electra while watching passengers board a single-engine Lockheed Orion, a tri-motor Ford, and a twin-engine Boeing 247. Gross concluded that for his first plane one engine was too few, three were too many. His decision pitted Lockheed against Douglas and Boeing,

which were already building the new, more luxurious multi-engine airliners. But Lockheed's aggressive sales effort garnered \$250,000 in orders before the all-metal Electra first flew. Sales to foreign countries — such as Venezuela — followed.

XC-35 pioneers pressurized cabins

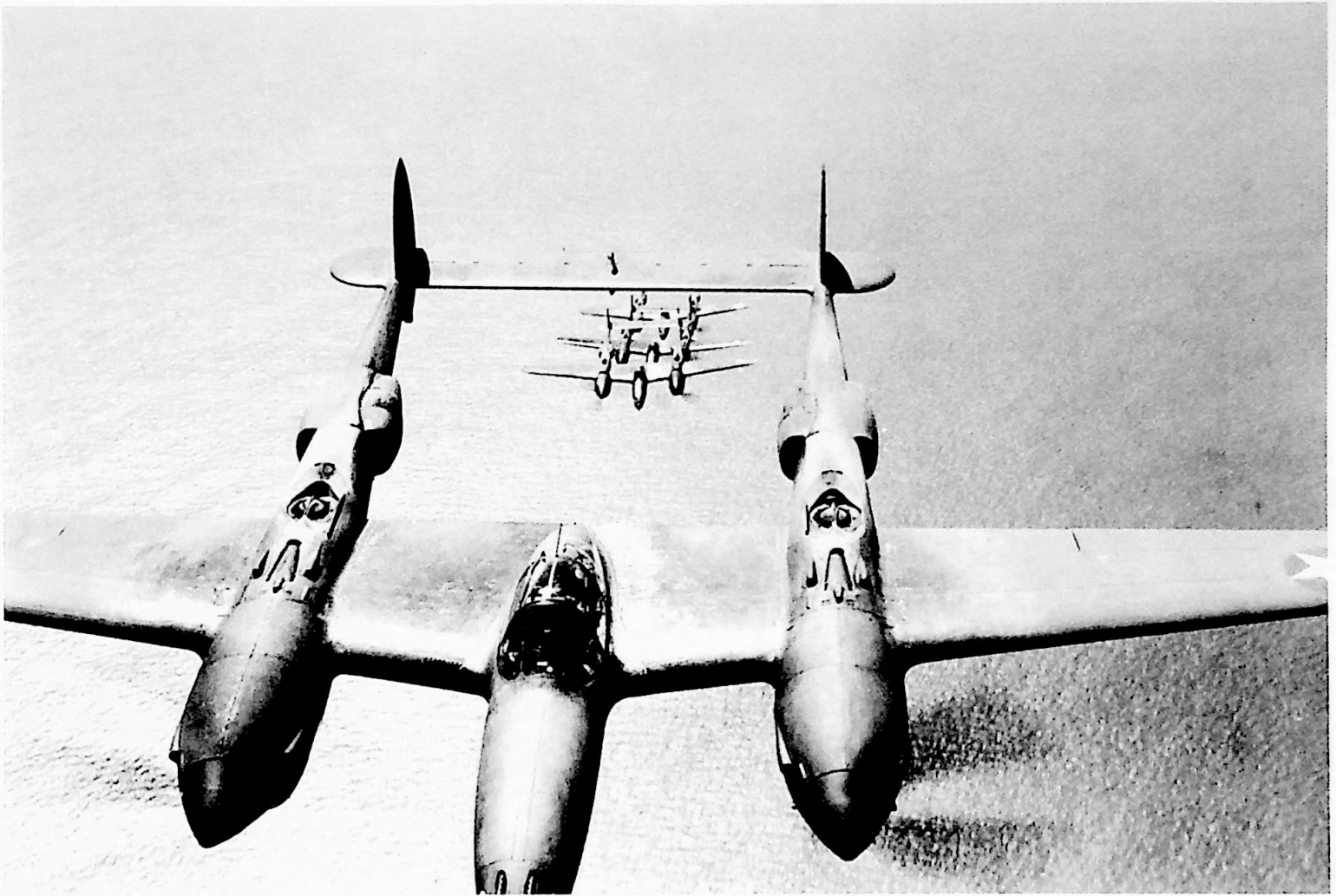


May 7 1937

The XC-35 lifted off for the first time, marking one of aviation's major advances — the first pressurized sub-stratosphere airplane. The XC-35 was a Model 10 Electra modified for the U.S. Army Air Corps. It paved the way for such later develop-

ments as high altitude military aircraft and pressurized airliners. Accomplishments of the XC-35 won for the Air Corps the United States' highest aviation honor, the Collier Trophy, in 1937.

Nazis dub P-38 the 'fork-tailed devil'



Jun 1937

Lockheed's design for the P-38 won the U.S. Army Air Corps competition for a new multi-engine fighter. After the U.S. entered World War II, the P-38 Lightning became the first U.S. Army

Air Forces fighter to shoot down a Nazi aircraft. German pilots responded by nick-naming the twin-boom fighter "the fork-tailed devil." The P-38 fought on every major battlefield, crossing the English Channel in the D-Day invasion and dueling with

Japanese Zeros in the Battle of Guadalcanal. Lockheed produced nearly 10,000 P-38s before the war ended in 1945.

Britain buys Hudson bomber



Jun 23 1938

Lockheed signed a contract with the British Air Ministry for 250 combat-fitted Model 14s, which the British named "Hudson" after explorer Henry Hudson. Lockheed eventually built nearly 3,000 of the sturdy bombers,

one of which was the first airplane to capture a submarine. During a patrol over the North Atlantic low-lying clouds opened up to reveal a surfacing U-boat straight ahead of the Royal Air Force bomber. The Hudson dropped four depth charges, and the resulting damage

released deadly chlorine gas from the sub's batteries, forcing the crew topside. Greeted by the aircraft's machine guns, the Germans surrendered. British ships arrived shortly after and towed the U-boat to shore.

Hughes sets world speed record in Model 14



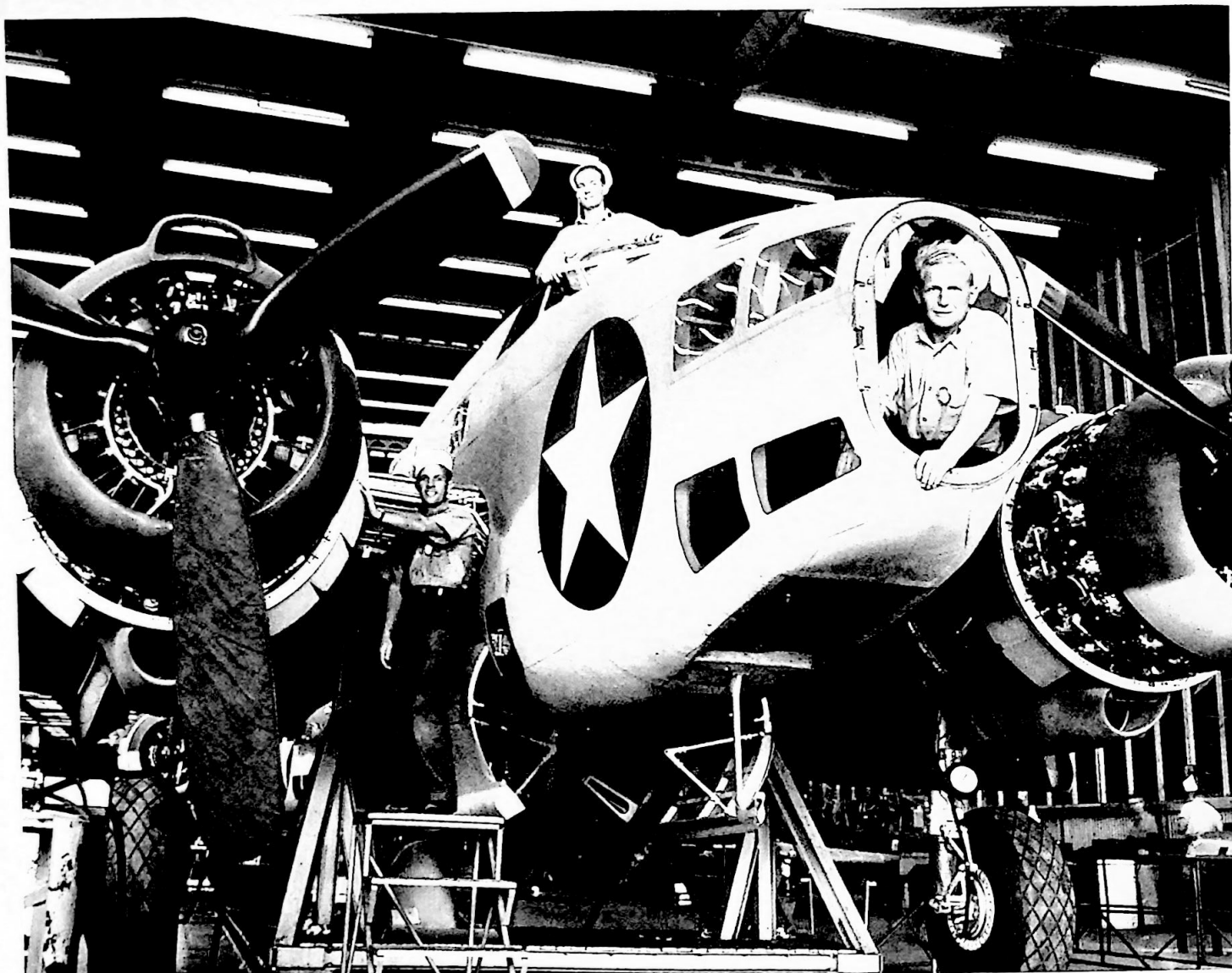
Jul 14 1938

Howard Hughes landed his Model 14 Super Electra at Floyd Bennett Field in New York, setting a new world record by circling the globe in three days and 19 hours. More than 1,000 policemen

were on hand to control the 30,000 people who gathered at the airport to greet Hughes, emerging from the doorway, above, in his omnipresent hat. Nearly six years later, Hughes set a transcontinental record in another Lockheed aircraft, a C-69

Constellation, by flying from Los Angeles to Washington, D.C., in seven hours and three minutes.

Model 18 spawns military models



Jul 1941

The bomber version of the Lodestar rolled out, start of a series of military aircraft derived from the Model 18

commercial transport. The British Air Force named it the Ventura. The U.S. Army Air Forces also deployed a bomber model, the B-34, and the U.S. Navy ordered a patrol version, the PV-1. The PV-1, above, and earlier U.S. Navy PBO-1 Hudson

patrol bombers established a line of U.S. Navy/Lockheed land-based patrol planes that continues to this day.

King flies Hudson



Dec 1941

A Christmas gift from Lockheed to Britain arrived in Iceland for service with the Royal Air Force Coastal Command. It was a Hudson bomber named "Spirit of

Lockheed-Vega Employees," which was built with labor donated by employees of Lockheed's Vega subsidiary and materials donated by the company. The Hudson performed many missions including reconnaissance, dive bombing, medium-

range bombing, skip-bombing, and transport. Britain's King George VI, above, used a modified Hudson as his private transport.

Camouflage cloaks factory, terminal



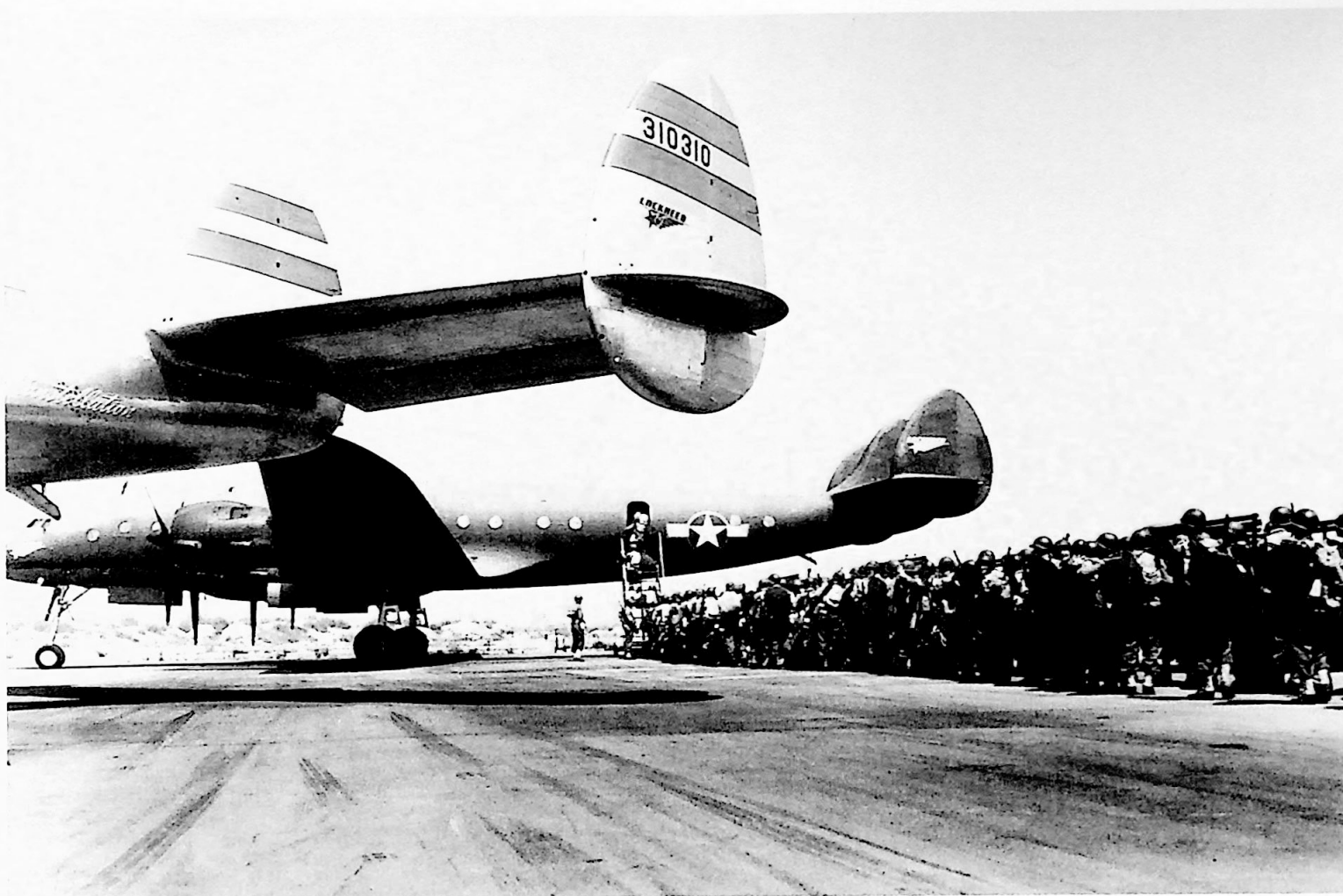
1942-1945

Lockheed donned a war uniform to mask its vital facilities from bombing raids. Approximately 1,000 acres of canvas and chicken wire were draped across build-

ings and parking lots. Wire-and-feather trees and burlap houses dotted the top of this artificial roof, giving the factory the look of a sleepy suburb from the air. Under the big top, as many as 94,000 employees during peak war production years

passed concrete bomb shelters going to and from work. Here, a ceiling of burlap covers the Lockheed Air Terminal and parking lot.

Air Force drafts Connie

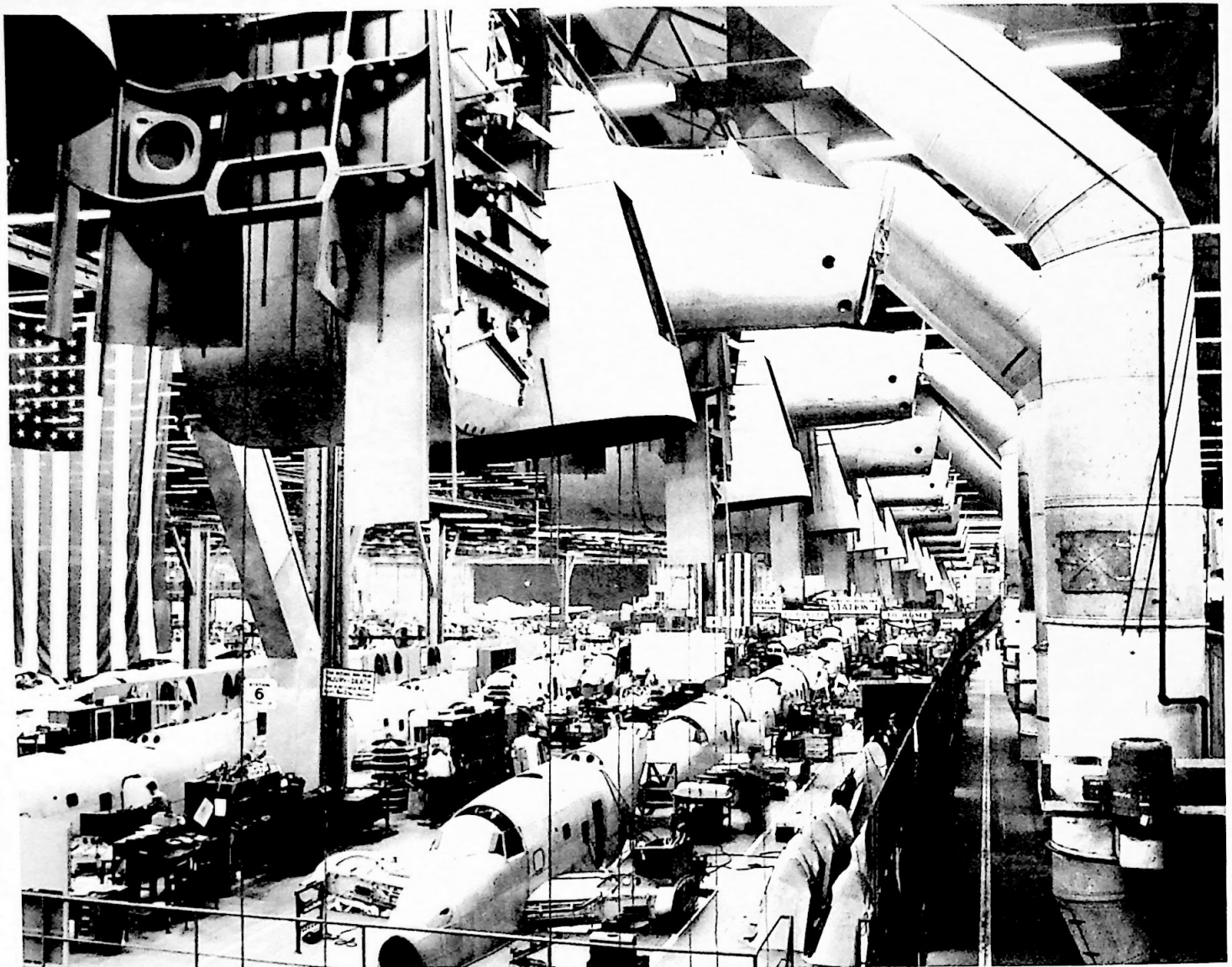


Jan 9 1943

The C-69 Constellation, originally designed as a civilian transport, made its first flight. But even before the Connie took to the air for the first time, it had joined the war

effort, requisitioned for troop transportation like all other airliners that were in design or production when Pearl Harbor was bombed. "Built like a fighter, it can outspeed a Zero," the press said of Lockheed's newest aircraft.

Wartime production soars to 20,000 aircraft



1939-1945

During World War II nearly 20,000 aircraft rolled out of Lockheed factories — the company's own bombers,

patrol aircraft, fighters, and transports, as well as the Boeing-designed B-17 Flying Fortress. B-34 bombers were assembled in Lockheed-Vega's Burbank plant, above.

P-80 ushers in jet age



Feb 1945

Lockheed began delivering the U.S. Army Air Forces' first operational jet fighter, the P-80 Shooting Star. The prototype for this fighter, nicknamed "Lulu-Belle," was completed by a Lockheed team headed by designer

C. L. "Kelly" Johnson in 143 days. Here, Johnson congratulates Lockheed test pilot Tony LeVier after a flight of the second prototype. Despite Lockheed's rapid work on the P-80, it did not arrive at the front in time to see combat in World War II. But it still made head-

lines. A stripped-down version named "Racey," piloted by Col. Albert Boyd, brought the world's speed record back to the U.S. on June 19, 1947.

Neptune goes the distance



Oct 1 1946

A Navy P2V Neptune named "The Turtle" landed in Port Columbus, Ohio, after traveling 11,236 miles from Perth, Australia, for a world's distance record. "The Turtle" took off on its historic flight with 8,467 gallons

of gasoline and a gross weight of nearly 43 tons that included a nine-month-old kangaroo. "It's one of the ageless wonders of aviation how that airplane ever got off the ground," Courtlandt Gross, who was Robert Gross's brother, recalled a decade later. The P2V, later

redesignated P-2, still holds the distance record for piston-powered aircraft as well as the record for the world's longest continuous production run — 34 years.

Wright's last flight



Apr 26 1944

In what was to be his last flight, 72-year-old Orville Wright took the controls of a Lockheed C-69 Constellation

following take-off from Wright Field, Dayton, Ohio. The sleek, four-engine, all-metal Connie was a far cry from the wood and fabric plane the Wright brothers flew to fame in 1903.

A Constellation of stars



Feb 15 1946

Thirty-five movie stars, executives, and reporters boarded a Constellation piloted by Howard Hughes for the inauguration of TWA daily nonstop service between Los Angeles and

New York City. Starting at the top, they are: Celeste Holm (right), Paulette Goddard, Veronica Lake, Tom Conway, Virginia Mayo, Nancy Guild, Walter Pidgeon, Edward G. Robinson, Linda Darnell with her husband, Pev Marley, behind her;

Constance Moore, photographer John Maschio, Jack Carson, John Royal of NBC, Janet Blair, Diana Lewis and her husband, William Powell.

World's (then) biggest transport takes flight



Nov 9 1946

The Constitution — the largest transport of its day — made its first flight. Its dimensions were roughly the same as the L-1011 TriStar's, and it had two pressurized cabins connected by spiral staircases and a galley that could serve 200 people. But

the big plane proved to be too far ahead of aircraft engine development to go into production: Lockheed originally fitted the Constitution with piston engines, expecting that higher power, lower weight turbo-props would be developed by the time the aircraft was ready.

But the powerplants were not available, and only two Constitutions were built. These were flown by the U.S. Navy until 1953 and then stored for two years before they were both sold for \$98,000 to civilian operators who scrapped them.

Connie pierces Iron Curtain

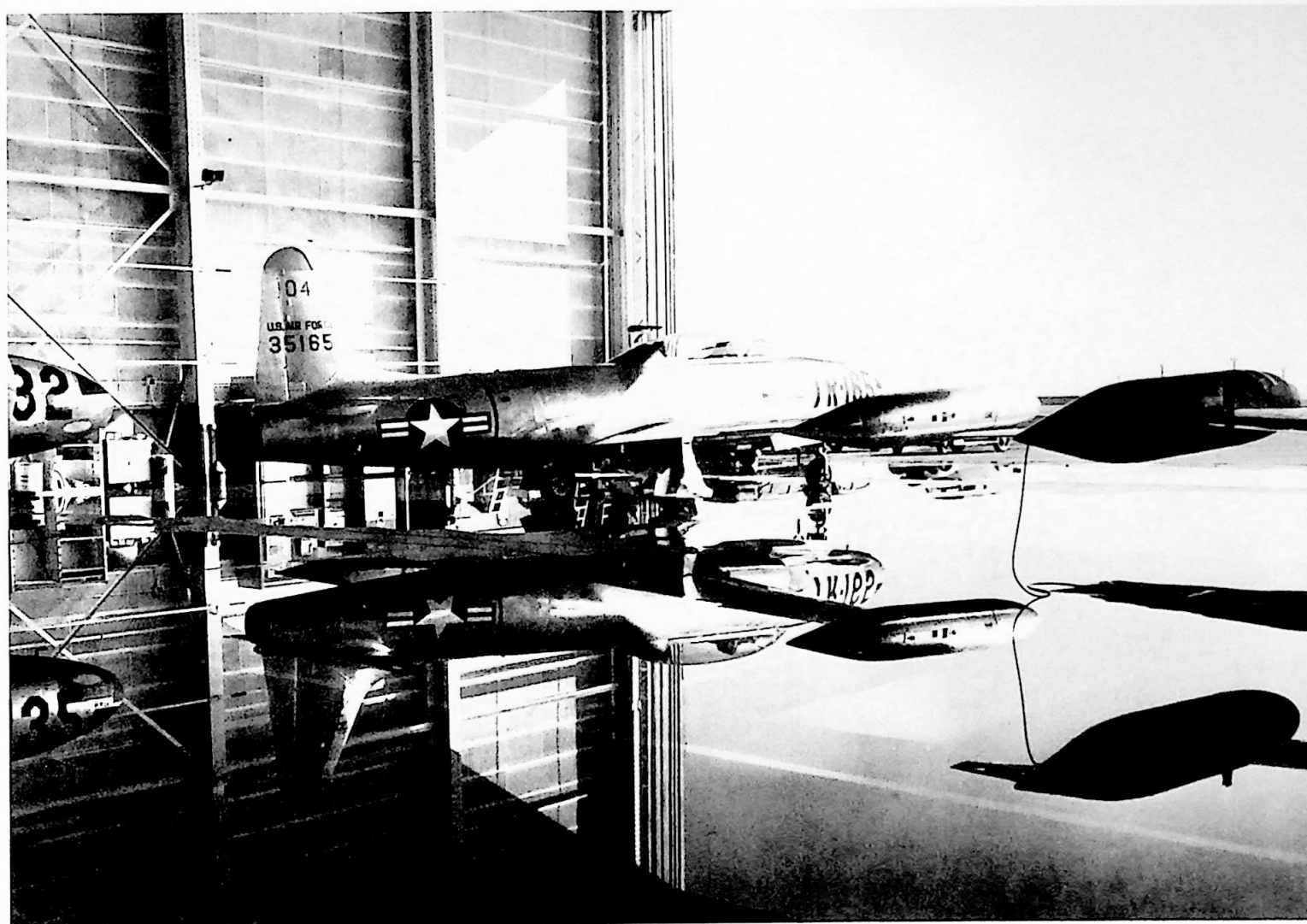


Jun 21 1948

The year-long Berlin Airlift began three days after the Soviet Union blockaded surface traffic between West Berlin in East Germany and the western zones of

Germany occupied by American, British and French forces. Lockheed C-121 Constellations were part of the vital lifeline, ferrying supplies and personnel from Frankfurt's Rhein-Main Airport to Berlin's Tempelhof Airport.

T-33 becomes America's first jet trainer



Aug 1948

The U.S. Air Force accepted its first jet trainer, the Lockheed TF-80C. It was later designated T-33 Thunderbird by the Air Force and TV-2 by the U.S. Navy. A few Lockheed executives were reluctant to develop a trainer from the company's

F-80 design. "Some of us thought making a trainer out of that beautiful, high-performing Shooting Star would be demoting it," Vice President Hall L. Hibbard later said. Such fears were dismissed by the Thunderbird's success — a production run of over 5,500 aircraft

in the U.S. and licensed production of 866 aircraft in Japan and Canada. The Thunderbird helped train 36,000 U.S. Air Force pilots and thousands more in 35 other countries.

Starfire serves in Korea



Sep 16 1949

The first production model of the F-94A interceptor took off from Van Nuys Airport. The aircraft was descended from the Lockheed T-33 trainer which, in turn, was

based on the Lockheed F-80, the U.S. Air Force's first operational jet fighter. An F-94B patrolling Korea scored its own first on January 30, 1953: the first U.S. Air Force "night kill" of an enemy aircraft using radar without visual contact. The F-94's pilot and radar

observer shot down a North Korean LA-9 seeing nothing more than a blip on their radar scope.

F-80 wins first all-jet dog fight



Nov 7 1950

An F-80 Shooting Star made history by shooting down a North Korean MiG-15 in history's first all-jet air battle. The F-80 entered production too late to see

combat during World War II, but made up for lost time in Korea, flying 26,000 sorties in fighter and ground-attack roles in the first seven months of the conflict.

Another version, the RF-80, provided reconnaissance. Above, the F-80 performs yet

another mission — escort to a B-29 bomber which has lost the use of its number four engine.

Lockheed moves to Georgia



Jan 4 1951

Mobilizing for the Korean conflict, the U.S. Air Force announced that Lockheed had been selected to reopen a Marietta, Georgia bomber factory, which had been closed since the end of World War II. The Marietta plant had 76 acres of factory space under one roof, most of it

jammed with surplus government machinery. Lockheed cleared the factory and began modifying World War II B-29 bombers, shown warming up on a snowy Georgia flightline. The company was in the plant barely four months when the U.S. Air Force asked

Lockheed to produce B-47 Stratojet bombers in a consortium with Boeing and Douglas. With these projects under way, the population of the new Lockheed-Georgia division swelled from 150 to 10,000 employees in one year.

Connie brings MacArthur home from Korea



Apr 19 1951

Gen. Douglas MacArthur — dramatic in a trenchcoat — steps out of his Constellation, "Bataan," in Washington,

D.C., after being relieved of his command of forces in Korea by President Harry S. Truman. MacArthur's U.S. Air Force Connie was emblazoned with five stars to signify the general's rank.

X-7 launches a new Lockheed division



Jan 1954

Lockheed formed a Missile Systems Division, predecessor to Lockheed Missiles & Space Company, to pursue a new business line opened by the success of its X-7 test vehicle. For more than four years Lockheed had been building and launching X-7s

to test ramjet engines at high altitudes and supersonic speeds. The X-7 was launched from B-29 aircraft; it was radio and computer-guided during flight, descended to earth on a parachute, and landed on a spike for reuse. "The X-7 wound up flying over four

times the speed of sound at 110,000 feet and came home. It looked like a yucca tree after it landed on its nose in the desert with a parachute draped all over it," remembers Willis Hawkins, retired senior vice president and corporate senior advisor.

Lockheed puts a man in a missile



Feb 1954

Lockheed test pilot Tony LeVier, in cockpit, guided a new aircraft with a pencil-thin fuselage and razor sharp wings through its first flight. It was the prototype of the F-104, the first U.S. Air Force operational fighter capable of sustained

flight at twice the speed of sound. The swiftness and sleek design of the F-104 won it the nickname "missile with a man in it." Thirteen countries flew the F-104, which, for many years, was NATO's first-line fighter.

XFV-1 – the VTOL that never did



Jun 16 1954

The XFV-1 fighter completed its first flight at Edwards Air Force Base, California. The XFV-1 was designed to take off and land vertically, but it never did. The reason was that the engine for which

it was designed never materialized. The closest it came to vertical take-off and landing (VTOL) was to fly or hover vertically after conventional take-offs. After 32 flights, the U.S. Navy cancelled the program. Lockheed test pilot Herman

"Fish" Salmon, shown above climbing to the cockpit, said flying the XFV-1 was "like sitting in a sling shot."

Hercules, the strong man of airlift, is born



Aug 23 1954

The Hercules YC-130 prototype took off from Burbank, signaling the beginning of what would become the longest running military airlifter production program in the world, and the most profitable program in

Lockheed history. Although the prototype first flew in California, production was assigned to the new Lockheed-Georgia division. Deliveries began in 1956 and more than 25 years later the first operational C-130 delivered to the U.S. Air Force was still flying despite

war wounds received in Vietnam. More than 1,600 C-130 military Hercules and L-100 commercial Hercules aircraft have been delivered to operators in more than 50 countries.

Mamie, Monty, Connie, and Ike



Nov 24 1954

President Dwight D. Eisenhower, Mrs. Eisenhower, and Britain's Field Marshal Bernard Montgomery boarded the newest presidential airliner, a Super Constellation named Columbine III, after Mrs.

Eisenhower christened it in Washington, D.C. The new aircraft was Eisenhower's third Constellation. He used his first Connie, also named Columbine, when he was military commander of NATO. Eisenhower was not the only president to travel in Lockheed aircraft. President

Lyndon B. Johnson used a C-140 JetStar, which he referred to as "Air Force One-Half," because the executive jet was smaller than his Air Force One transport.

JetStar becomes Lockheed's 241-day wonder



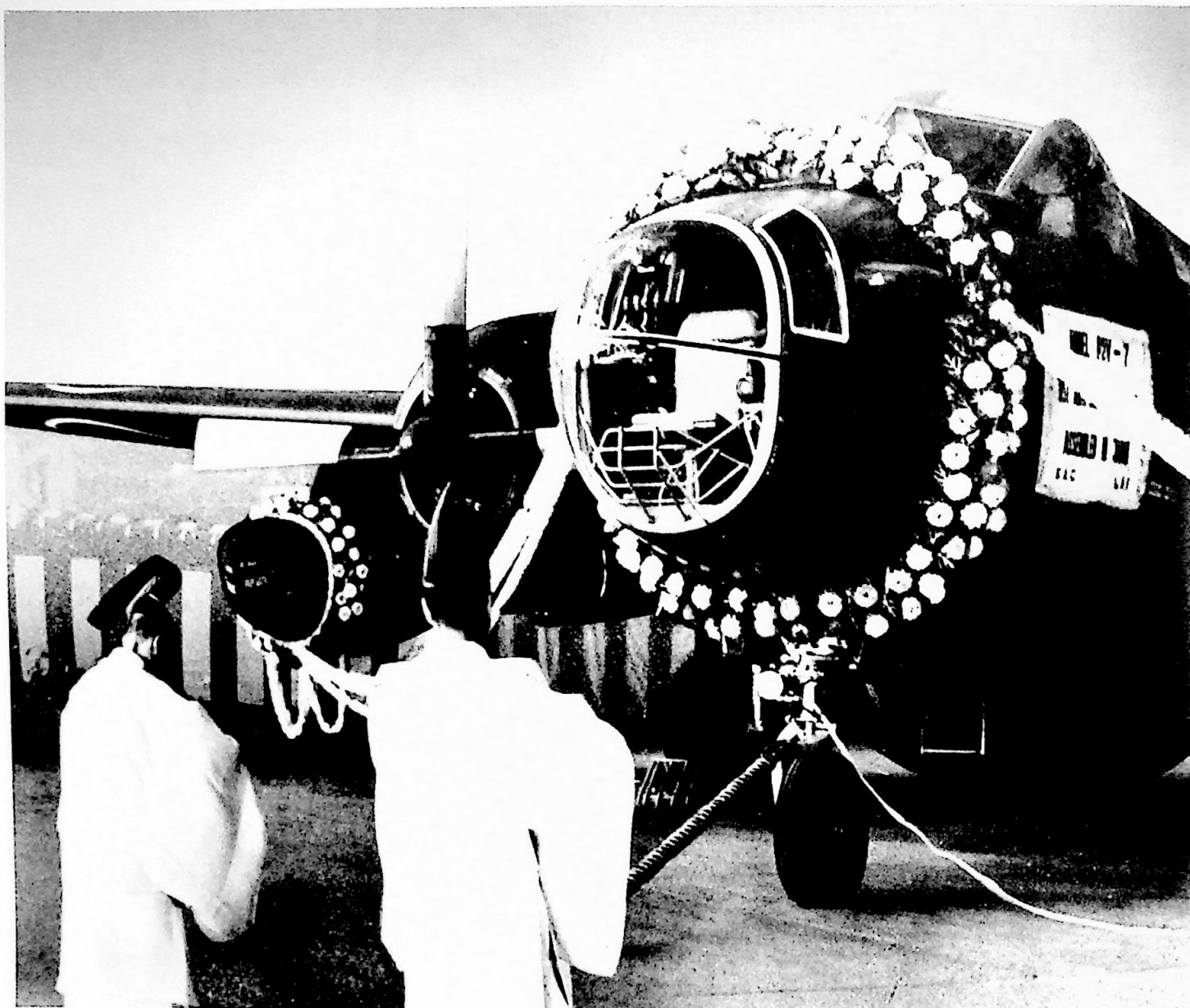
Sep 4 1957

Just 241 days after Lockheed began its design, the JetStar twin-engine prototype made its first flight over Burbank. Lockheed began the program in response to a U.S. Air Force request for a military utility transport and com-

pleted the prototype more than a year before its competitor. However, a limited budget prevented the Air Force from launching the program with a production contract. Lockheed decided to continue with the JetStar nevertheless and began production of a four-engine

version at Lockheed-Georgia. The decision paid off. The U.S. Air Force and Navy, U.S. and foreign government agencies, and a host of companies bought the JetStar.

Flowers for Neptune



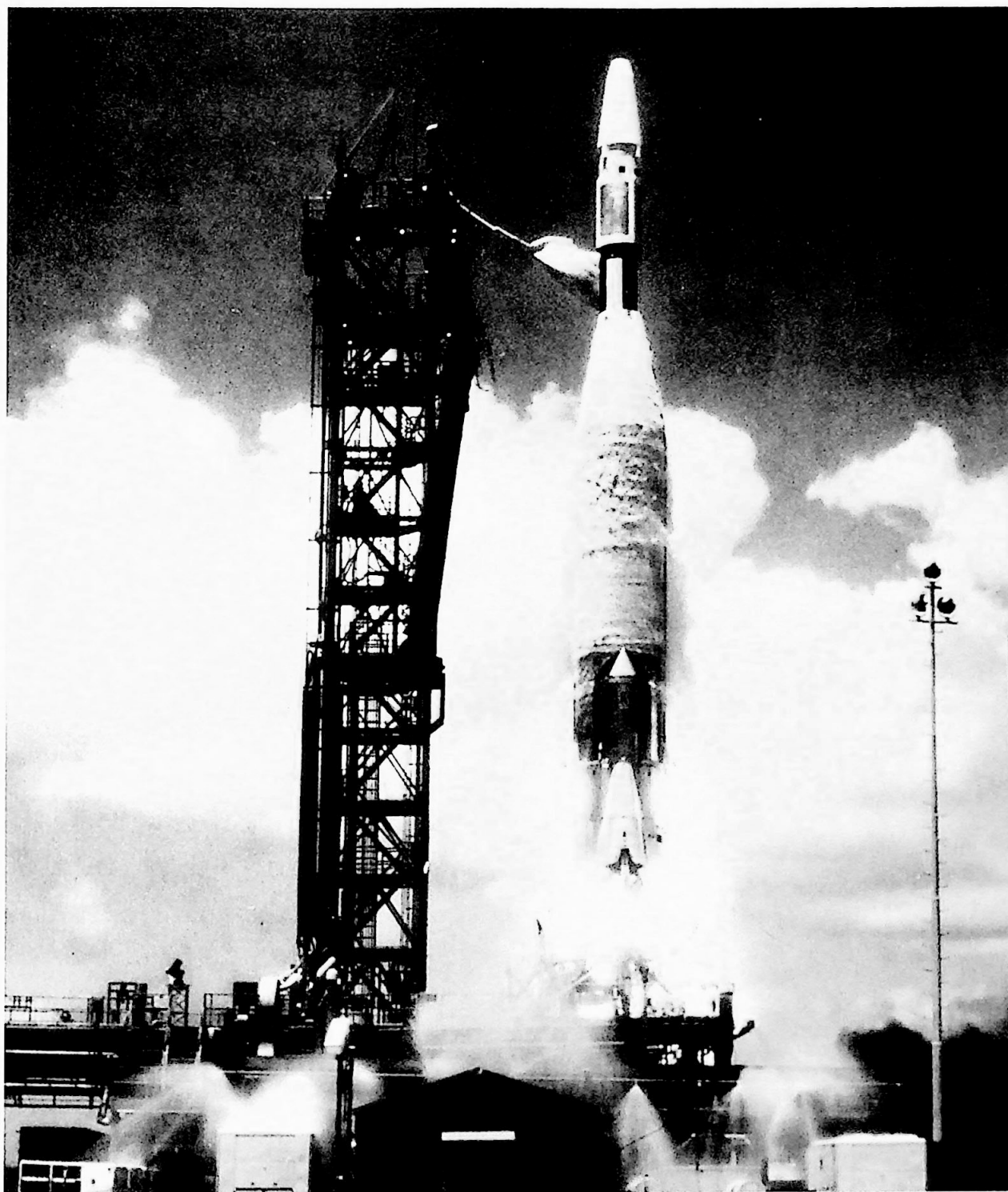
Apr 1958

Lockheed and the U.S. Navy signed a contract calling for the licensed production of P2V-7 Neptunes by Kawasaki Aircraft Company in Japan. Under the contract, Lockheed was to provide technical assistance during production

of the antisubmarine warfare aircraft for the Japanese Maritime Self Defense Force. The first Kawasaki-built Neptune, draped with chrysanthemums, rolled out in the fall of 1959 to receive a Shinto blessing. The contract began a tradition of Lockheed/Japanese

cooperation in the field of antisubmarine warfare. The Japanese produced later versions of the Neptune and are now producing P-3C Orions under license.

Agena carries U. S. to new heights



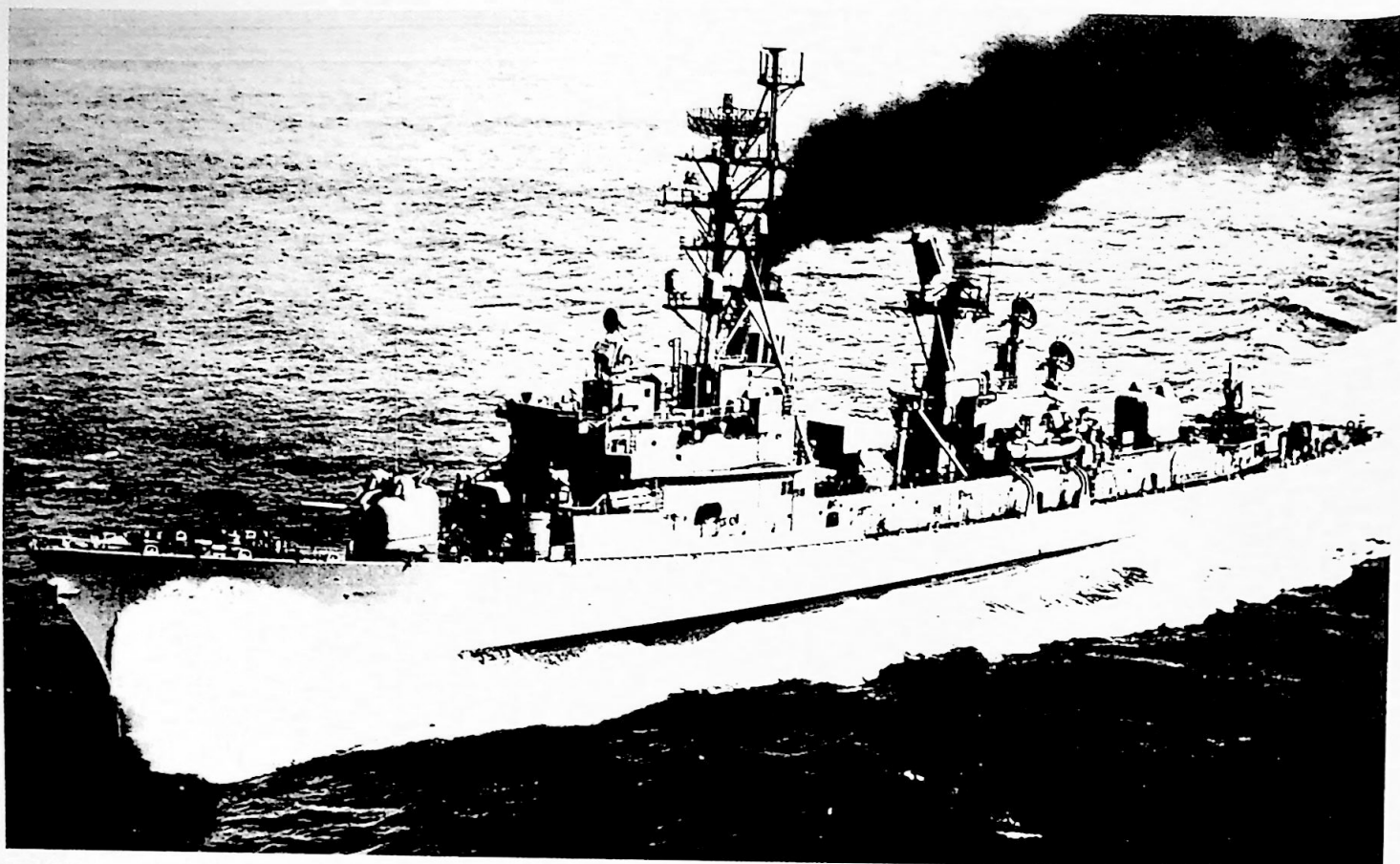
Feb 28 1959

Lockheed's Agena spacecraft put America's first true satellite in orbit. In succeeding years, Agena was used as a satellite and as a booster to send observatory and meteorological satellites into orbit. It also propelled

spacecraft to the moon and past distant planets. Agena's record was filled with "firsts": first spacecraft to be controlled in orbit by ground command, first to propel itself from one orbit to another, first to propel spacecraft on flights past Mars and Venus. Attached to Gemini XI, the

Agena carried humankind to new records for altitude — 852 miles — and speed — 17,930 miles per hour. Above, an Agena, in combination with an Atlas, launches a Ranger spacecraft from Cape Canaveral, Fla.

Shipyard joins Lockheed family



Mar 31 1959

Lockheed announced its purchase of a controlling share of the Puget Sound Bridge and Dredging Company in Seattle, Wash. It was one of the oldest construction and shipbuilding companies in the West — founded in 1889 — and had

more than 1,000 ships and other major projects to its credit. One of these was the construction of Seattle's Harbor Island, the world's largest man-made island. Lockheed ran the company as a wholly owned subsidiary. After completing projects begun under previous

owners, Lockheed launched its first purely Lockheed ship, the USS Goldsborough missile destroyer, above, in December 1961. In 1965, the name of the subsidiary was changed to Lockheed Shipbuilding and Construction Company.

Puckered Penguins to the rescue



Jan 23 1960

Seven ski-shod C-130 Hercules transports landed at the National Science Foundation's antarctic research station in McMurdo Sound. In succeeding years, Hercules aircraft flown by U.S. Navy crews calling themselves "Puckered Penguins" delivered thousands

of tons of supplies, including prefabricated buildings that multiplied into villages. The Hercules' greatest gift to the researchers was mobility. The C-130s carried explorers deep into areas of the vast antarctic continent where no one had walked before. The Herks carried precious

cargo out, too: a Russian scientist with a bleeding ulcer and a Seabee with a broken back. To reach the Seabee, the C-130 flew through hundreds of miles of darkness from New Zealand, braved fickle weather, and landed on a runway still bumpy from hastily cleared drifts.

U-2 secrecy crashes with Powers



May 1 1960

The wall of secrecy around Lockheed's U-2 was shattered as Francis Gary Powers, above, and his U-2 were shot down over the Soviet Union. The incident triggered an international crisis as the Soviet Union charged the U.S. with aggression and threatened to

attack nations that allowed the U.S. to base "spy planes" on their soil. After the initial shock of the incident faded, U.S. officials disclosed that the U-2 had contributed significantly to the nation's security. As Allen Dulles, retired director of the Central Intelligence Agency, wrote

in his memoirs, the U-2 "could collect information with more speed, accuracy, and dependability than could any agent on the ground . . . The U-2 marked a new high, in more ways than one, in the scientific collection of intelligence."

Polaris — the shot heard round the world



Jul 20 1960

A U.S. Navy/industry team proved that a missile could be launched from under water and blast its way to a target 1,000 miles away. It was Polaris, the first ballistic missile fired from a submerged submarine. The commander aboard the sub

USS George Washington immediately wired President Eisenhower: "Polaris. From out of the deep to target. Success." That success would reshape America's defense strategy as Polaris and following fleet ballistic missiles became one vital leg of the United States' nuclear

deterrence triad. Lockheed was prime contractor and program manager for Polaris and for all subsequent fleet ballistic missiles, including the sixth generation of the series, Trident II.

Agena carries U. S. ahead in the space race



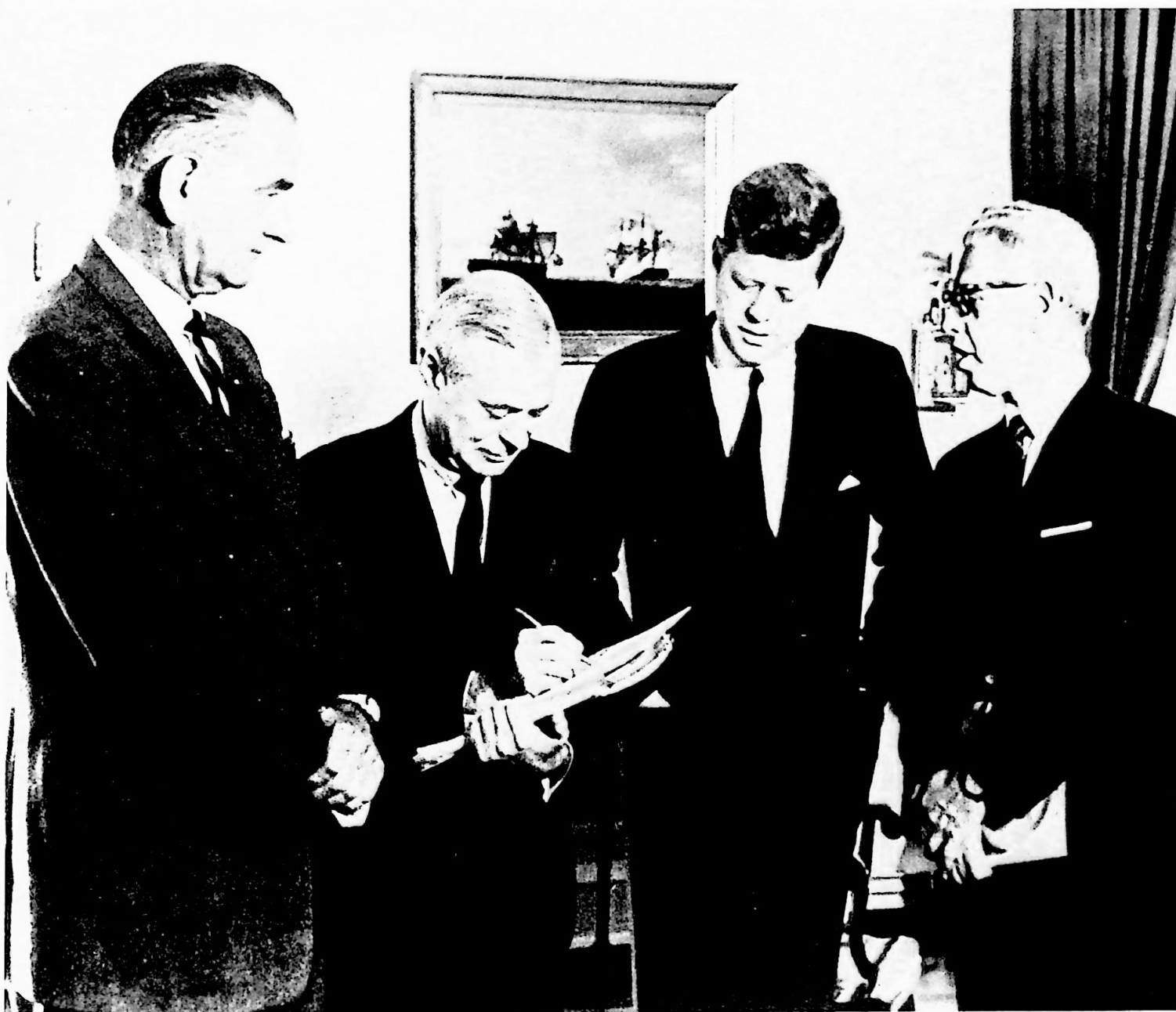
Aug 15 1960

President Dwight D. Eisenhower unfolded the stars and stripes from the first capsule successfully recovered intact after earth orbit, re-entry, and splashdown. The capsule had been launched by a Lockheed Agena spacecraft. After lifting out the flag, the President looked

around the room at the military and civilian officials gathered there, including Lockheed President Courtlandt Gross. "Mere medals and ribbons are not enough to thank all of you," Eisenhower said. When the capsule was opened it revealed a hand-

written tag on one of the instruments. "OK to install. This one is coming back." The tag was signed by a confident Lockheed inspector at Vandenberg Air Force Base, site of the launch.

President Kennedy lauds Lockheed's Plan for Progress



May 25 1961

Lockheed President Courtlandt Gross signed a document pledging that Lockheed would work with the U.S. government to broaden employment and advancement opportunities for members of minority groups. Vice President

Lyndon B. Johnson, President John F. Kennedy, and Labor Secretary Arthur Goldberg witnessed Gross's signature during a White House ceremony. Defense companies across the nation had been requested to pledge their cooperation in the Kennedy Administration's Plan for

Progress. Lockheed was the first company to do so. President Kennedy called the plan "a milestone in the history of civil rights" and congratulated Lockheed "on its positive, constructive step toward elimination of discrimination."

Lockheed LEAPs to fix Electra



Jun 1961

The final Electra in the Lockheed Electra Action Program (LEAP) flew back into service. LEAP was Lockheed's program to correct an unexpected problem in new Electras already in service. What would normally be viewed

as a minor, repairable weakness in the propjet engine mountings could, under certain conditions, lead to nacelle vibration, then wing flexing, and finally failure. Lockheed accepted the responsibility of modifying the wings and paid the entire cost of LEAP. The

corporation's reaction won Lockheed high praise for its integrity and, in the words of American Airlines President Marion Sadler, for its "responsible business conduct."

Orion joins the Navy



Aug 1962

The new P3V-1 Orion joined the fleet during delivery ceremonies at Patuxent River Naval Air Station, Md. It was the first subhunter to join the Navy since the Neptune 17 years earlier. In wel-

coming the new aircraft, later designated P-3A, Vice Admiral R. B. Pirie, deputy chief of naval operations, noted that the Orion had been developed by the same Navy/Lockheed team "that made the Neptune so successful . . . we therefore

consider ourselves fortunate to have true experts collaborating to make the Orion the most advanced and most effective antisubmarine warfare aircraft in the world."

'The right stuff': Cochran and the F-104



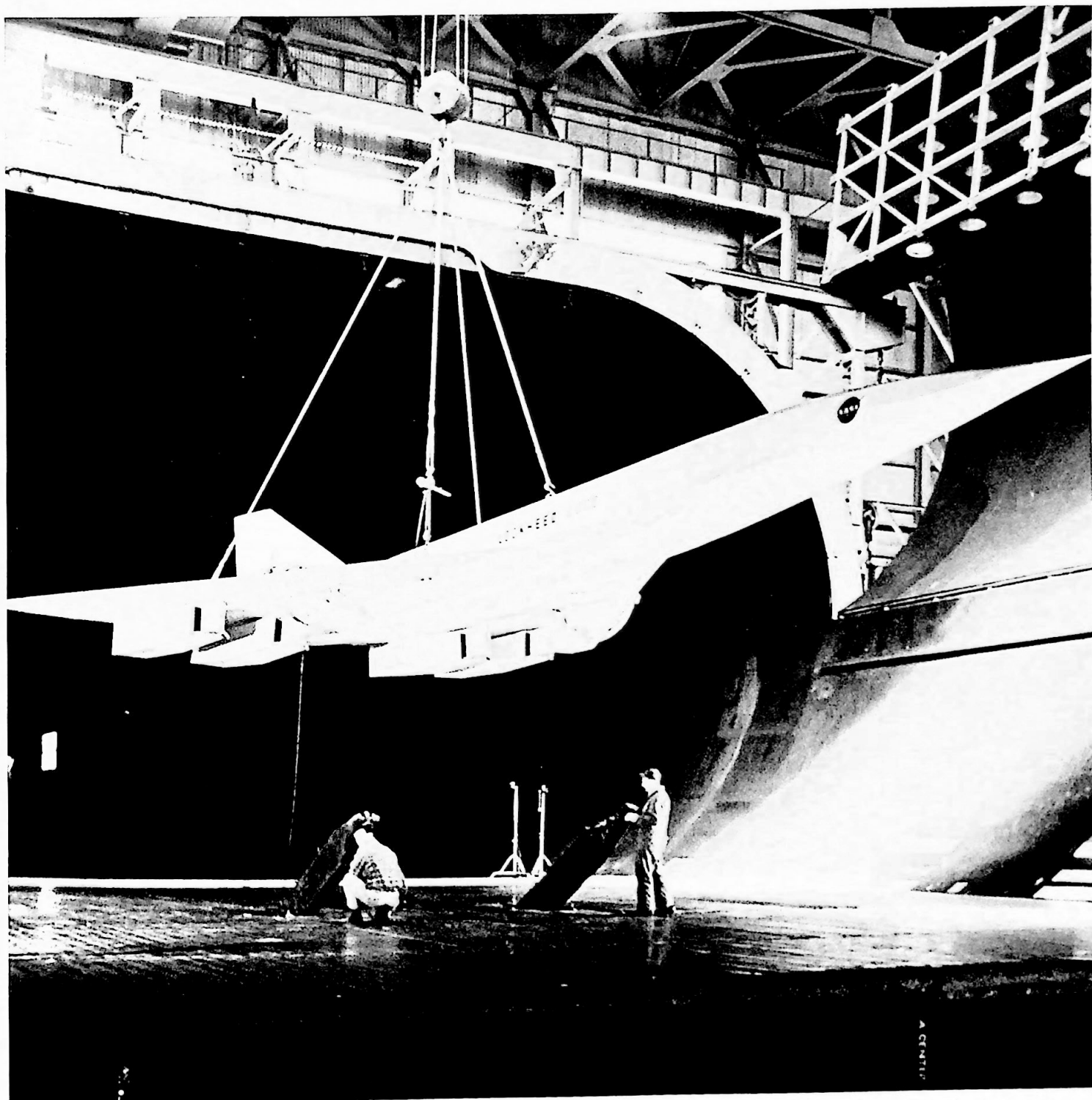
May 2 1963

Famed aviator Jacqueline Cochran raced an F-104 Starfighter through the 15/25 kilometer straight line speed course setting a 1,273.1 mile-per-hour women's record. She followed it with a 1,203.94 mile-per-hour world's record over a 100 kilometer closed course,

winning praise from her F-104 tutor, Col. Chuck Yeager, above. Cochran, who then held more records than any pilot in the world said, "The F-104 is the hottest jet fighter aircraft I've ever flown." Records were a habit for the F-104. It was the first plane to hold both altitude

and speed records at the same time, having reached 91,243 feet on May 8, 1958 and 1,404.19 miles per hour eight days later. The following year, an F-104 set a new altitude record of 103,396 feet. Cochran surpassed her own F-104 feats in 1964 at Edwards Air Force Base.

SST—the plane that never got off the ground



Jun 1963

President John F. Kennedy announced the United States would develop a supersonic transport (SST). The ensuing competition pitted Lockheed against Boeing for an aircraft market estimated at \$25 billion to \$50 billion. Lockheed's design drew on the company's experience

with its A-12, YF-12, and SR-71 series of aircraft that cruise at three times the speed of sound. During its research, Lockheed tested a quarter-scale SST model, above, in NASA's wind tunnel at Moffett Field, Calif. Boeing was chosen to build the supersonic airliner, but

in the face of opposition to concept and cost, Congress did not approve any funds. The only supersonic transport ever built and still flying is the English and French-built Concorde, which has been called a technological success, but a financial failure.

Look Ma, no hook



Oct 30 1963

A KC-130 Hercules refueler transport became the biggest and heaviest aircraft ever to operate on a U.S. Navy aircraft carrier. In choppy seas off Boston the KC-130 made 29 touch and go landings, 21 unarrested full stop

landings, and 21 unassisted take-offs from the USS Forrestal. The tests were part of a Navy study of C-130 transports for carrier logistics support. A Lockheed employee was on hand for the trials. This is one landing he saw: "The airplane stopped right opposite the

captain's bridge. There was cheering and laughing. There on the side of the fuselage, a big sign had been painted that said, 'Look Ma, no hook.' "

Johnson pays tribute to Johnson



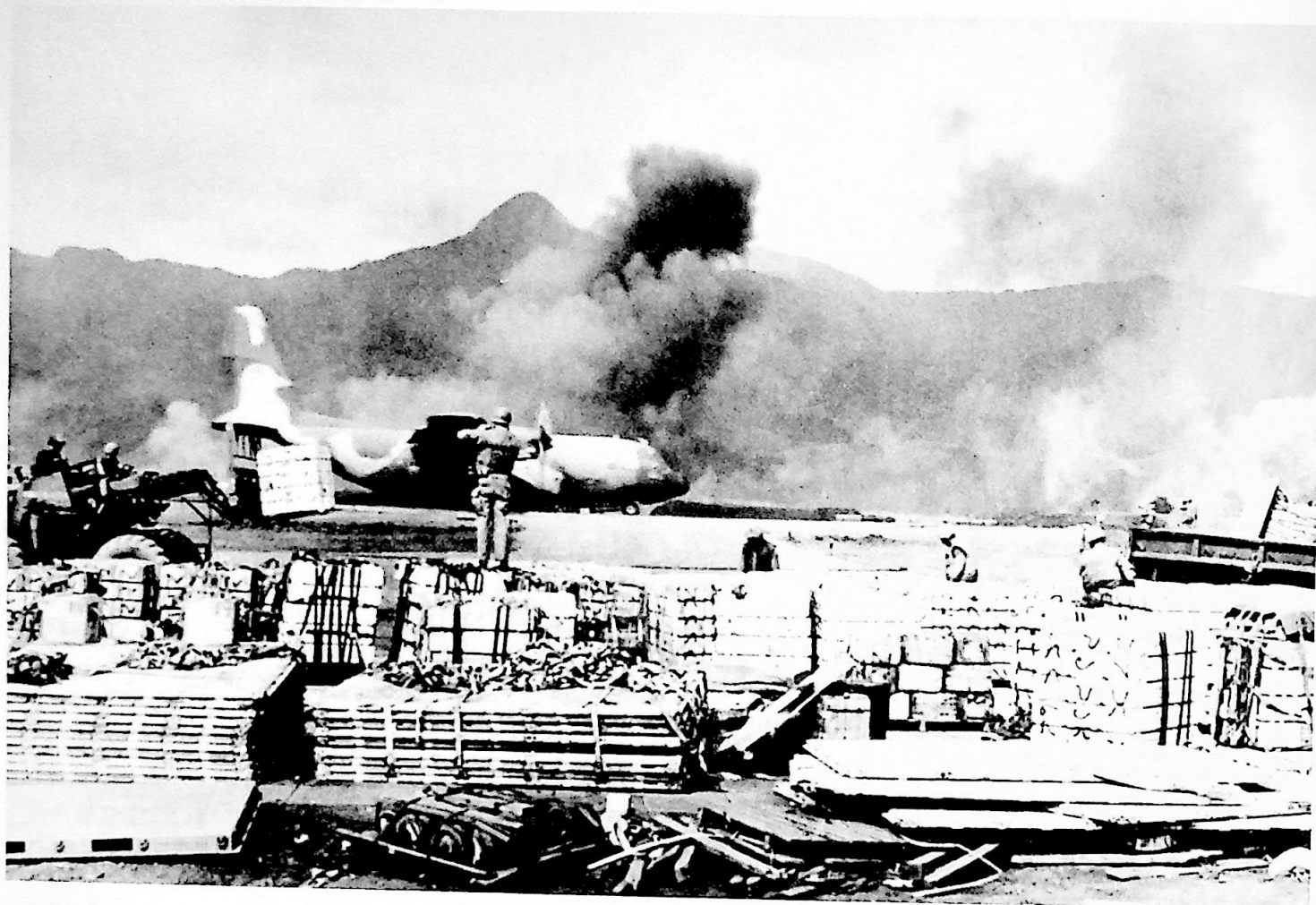
Sep 24 1964

President Lyndon B. Johnson presented a Collier Trophy to Lockheed Vice President Kelly Johnson. The President referred to Johnson as "the most distinguished citizen of that most unique and distinguished corner of our land, the 'Skunk Works.' "

Lockheed designer's second Collier Trophy was for the A-12/YF-12/SR-71 series of aircraft. He had already won a Collier for the design of the F-104. "Kelly Johnson and the products of his famous 'Skunk Works' epitomize the highest and the finest goal of our society, the

goal of excellence," said President Johnson. Above, Kelly Johnson stands to the President's left while Air Force Secretary E. M. Zuckert stands to the President's right.

Hercules – 'guardian angel' in Vietnam



1964-1973

True to its name, the C-130 performed heroically in Vietnam, carrying troops, supplies, refugees, and the wounded, and refueling aircraft in flight. As U.S. Marine Corps Capt. George A. Baker III wrote his cousin in Marietta, Ga., "Please tell

everyone there at Lockheed thanks for the C-130 Hercules! . . . During the monsoon, when the ships couldn't get in, the C-130s came in. When the VC blew bridges on both sides of our artillery unit, the C-130s flew in ammo and chow. They are also used exclu-

sively for mail (both ways), and a wonderful ticket out . . . for recuperation in Bangkok, Okinawa, and Japan. The possessor of a wonderful safety record, she is somewhat our guardian angel."

Lockheed makes first entry into Saudi market



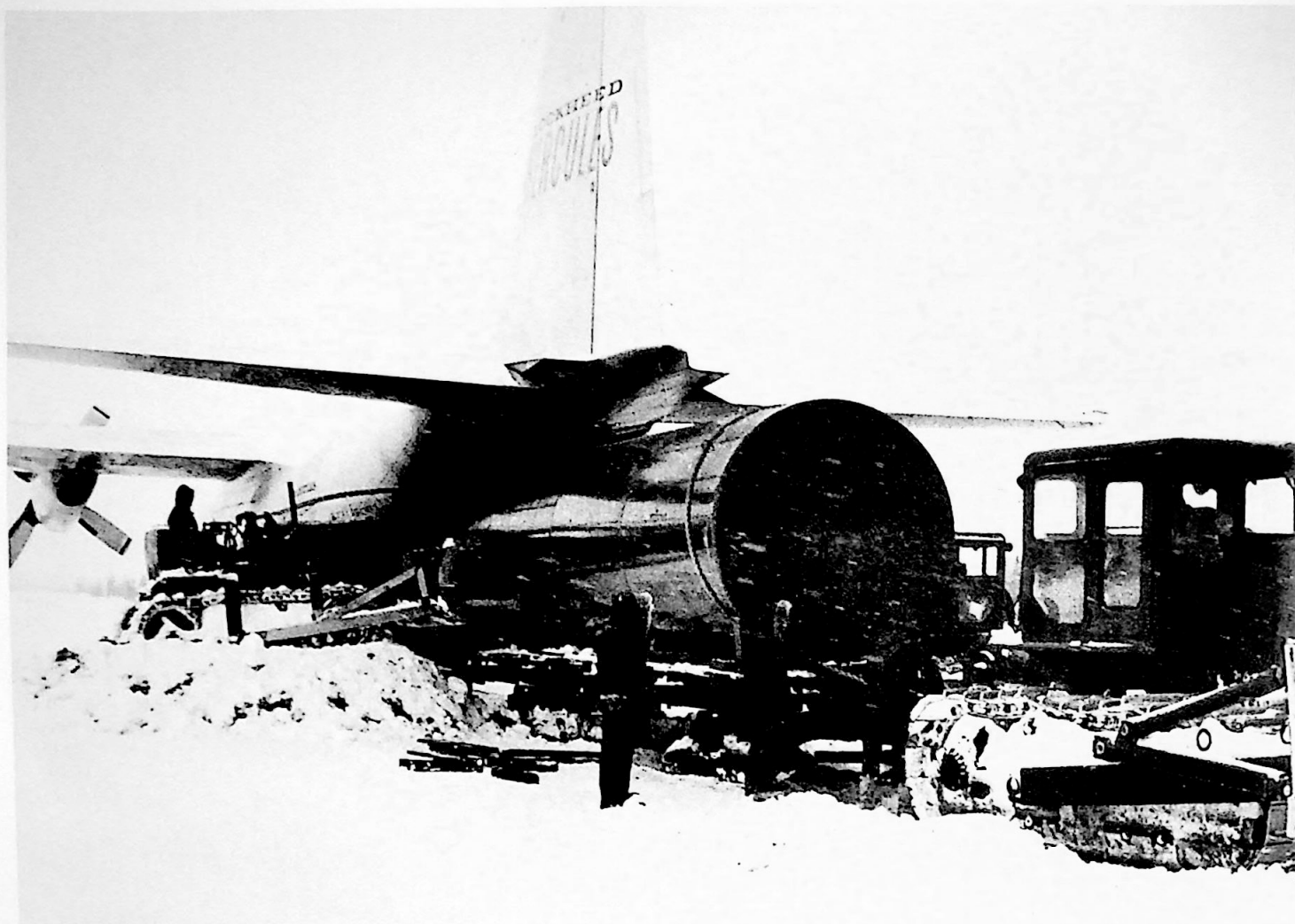
Jan 1965

The Royal Saudi Air Force (RSAF) ordered four C-130 cargo aircraft from Lockheed-Georgia. The same year Lockheed Aircraft International A.G. (LAIAG) signed a contract with the RSAF to perform C-130 maintenance

and repair and to train Saudi personnel in C-130 support functions. The Saudi Hercules fleet is now the world's fourth largest. One Saudi C-130 was modified by Lockheed Aircraft Service Company as a flying hospital. In 1974 LAIAG began assist-

ing with the operation of the RSAF air defense ground environment system. LAIAG began design and construction of an air traffic control system for an international airport at Jeddah, Saudi Arabia, in 1977.

Hercules labors in Alaska



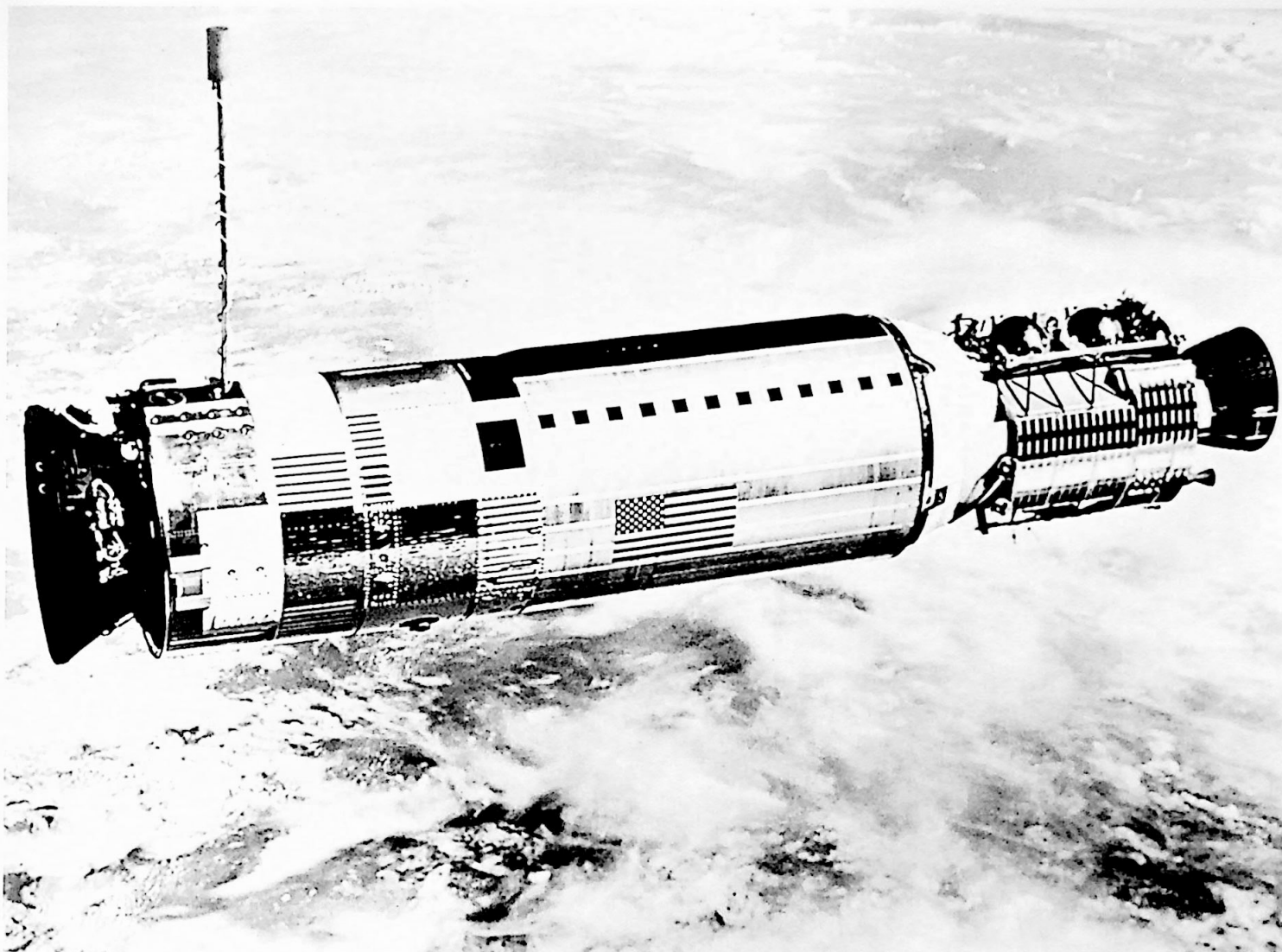
Mar 1965

The Hercules pioneered airlift support of arctic oil exploration. During a one-month demonstration a single Hercules on lease to Alaska Airlines carried more than two million pounds of outsize and general cargo to the short, narrow, icy airstrips

on Alaska's North Slope. But the Alaskan oil rush and the labors of Hercules were just beginning. Ten years later with construction of the Trans-Alaska Oil Pipeline under way, Alaska International Air's fleet of L-100-30 Hercules airlifters hauled 500 tons a day. Bulk

fuel, drilling pipe, food, and housing units emerged from the cargo holds of the Hercules. A Fairbanks newspaper declared, "The Hercs are just the work-horses of the Arctic. Our oil operations would grind to a halt without them."

First successful space docking



Mar 16 1966

A Gemini VIII spacecraft linked with a Lockheed Missiles & Space Company Agena spacecraft 185 miles above the Earth. It was the first successful docking of two vehicles in space. The photo above was taken of Agena by an astronaut in a

later Gemini-Agena docking as the two spacecraft moved through space at 17,500 miles per hour. NASA's Gemini program paved the way for the Apollo program that took men to the moon.

Lockheed's many missions in Vietnam



Apr 1967

A U.S. Navy SP-2H Neptune inspects a junk during a patrol near Vung Tau, Vietnam. The SP-2H was one of nine Lockheed aircraft used by U.S. forces in Vietnam. P-3 Orions joined Neptunes in watching coastal waters. C-121 Constellations filled

with specialized electronics provided tactical reconnaissance. F-104 fighters flew ground support. C-140 JetStars performed surveillance of U.S. Air Force airways and communications. YO-3A aircraft tracked enemy ground movements with sensors. C-130, C-141,

and C-5 aircraft carried whatever needed moving in Vietnam: weapons, food, ammunition, communications gear, and troops. One C-130 even carried two elephants to a Vietnamese saw mill where they were needed to move logs.

Cheyenne — rigid rotor warrior



Dec 12 1967

The prototype of the Cheyenne AH-56 helicopter made its first public flight in Van Nuys, Calif. It was specifically designed as a heavily armed combat aircraft, often referred to as a "flying tank." The Cheyenne

combined capabilities of both rotor and fixed-wing aircraft. It flew much faster than helicopters then in combat, reaching top speeds of about 250 miles per hour. But it still retained the vertical take-off and landing capabilities of a helicopter. The Cheyenne incorporated

rigid rotor technology pioneered by Lockheed for greater stability and faster response than conventional rotor systems. However, the high cost of the aircraft caused the U.S. Army to cancel production.

Deep Quest dives to record depth



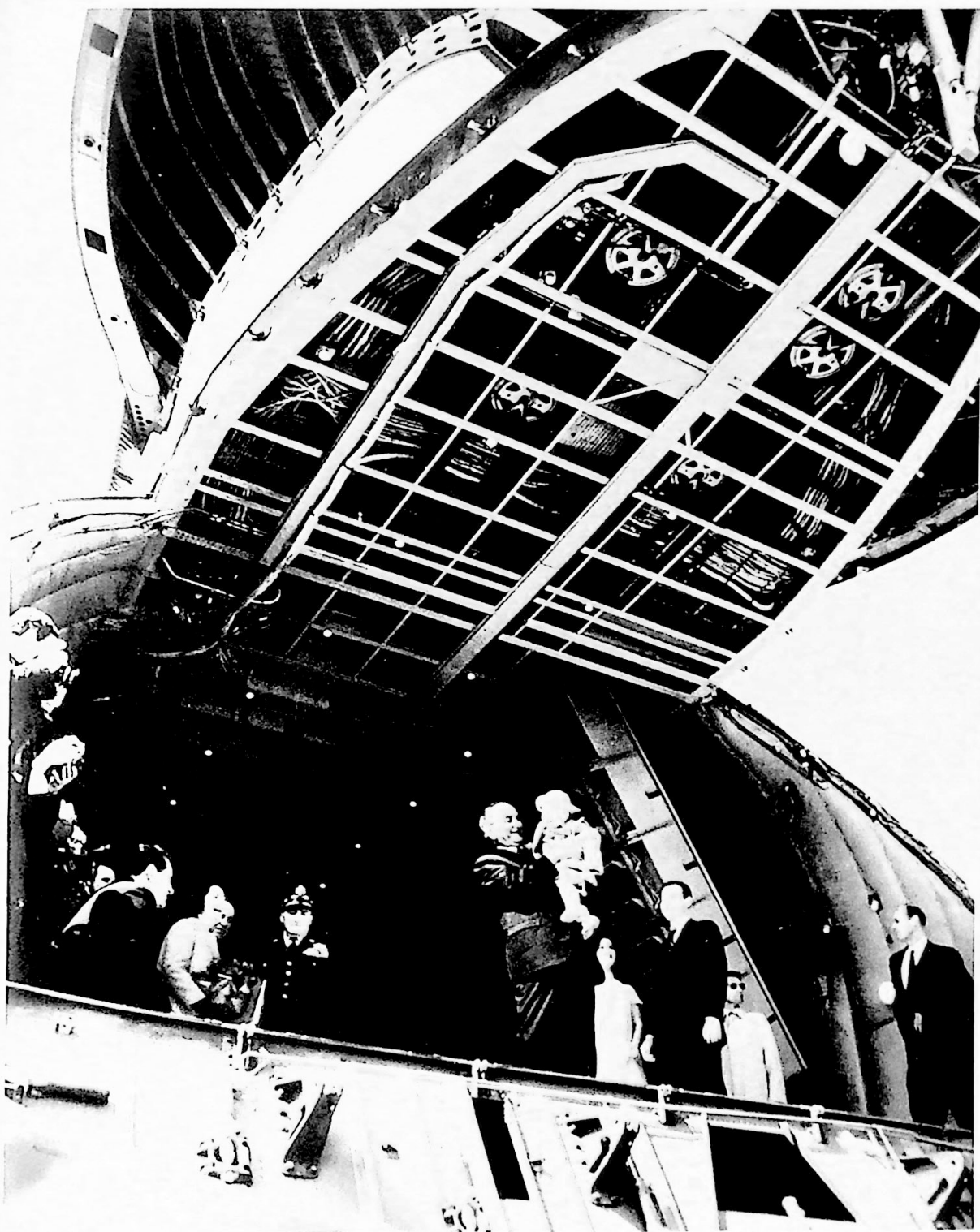
Feb 28 1968

Lockheed Missiles & Space Company's underwater research vehicle, Deep Quest, dived to a depth of 8,310 feet to reach the ocean floor near San Diego. It was deeper than any true submarine had ever gone before.

A year after its historic dive, Deep Quest made more headlines by recovering flight and voice recorders from two aircraft that had crashed at different times into Santa Monica Bay near Los Angeles International Airport. Deep Quest has often been used for university and U.S. Navy

ocean floor surveys that have provided a wealth of new information about this largely unexplored environment.

President makes C-5 rollout a family affair



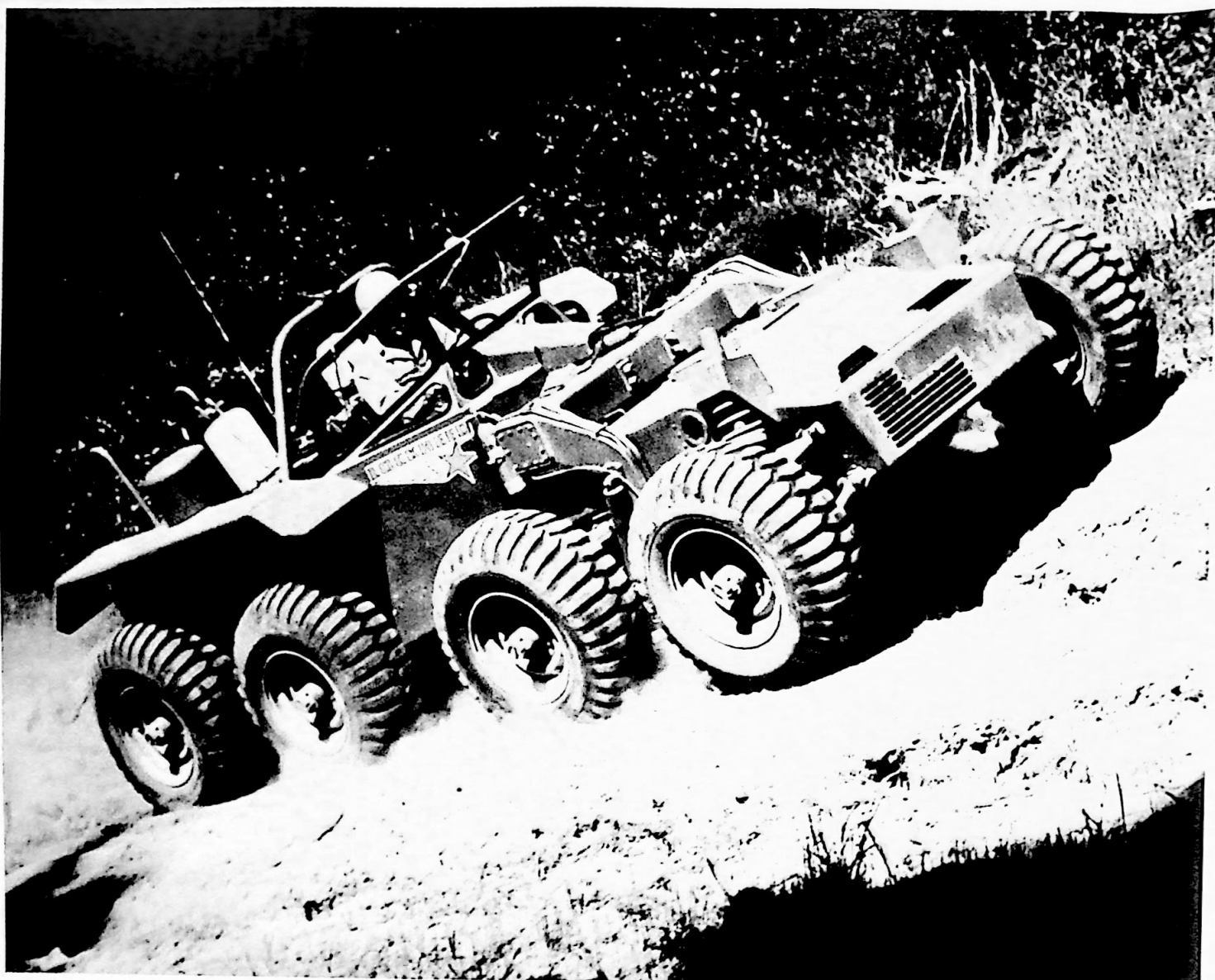
Mar 2 1968

President Lyndon B. Johnson proudly holds his grandson, Patrick Lyndon Nugent, in the cargo compartment of the first C-5 to the amusement of his wife, Lady Bird, standing to the left. The President

and his family visited Lockheed-Georgia for the rollout of the world's largest airplane, the C-5 Galaxy. Johnson aptly summed up the characteristics of the huge aircraft: "Its cargo floor alone is longer than the first flight made by the Wright

Brothers . . . its jet engine is twice as powerful as any now in existence . . . it can do three times the work of the biggest cargo plane that the United States now has."

Twister covers new ground



Jun 6 1968

Lockheed Missiles & Space Company's Twister made its first public appearance. LMSC had earned a reputation for inventing vehicles that soared into space or dived to the bottom of the

sea, but the agile Twister was built for a new medium — the ground. It could move speedily through swamps, ravines, sand, snow, or, when available, on highways. From Twister's eight-wheel, dual-body design, LMSC derived a number of other

military ground vehicle prototypes for the U.S. Army. These included the Dragon Wagon for carrying supplies and the Scout Twister for ground reconnaissance.

Quiet hunter stalks guerrillas



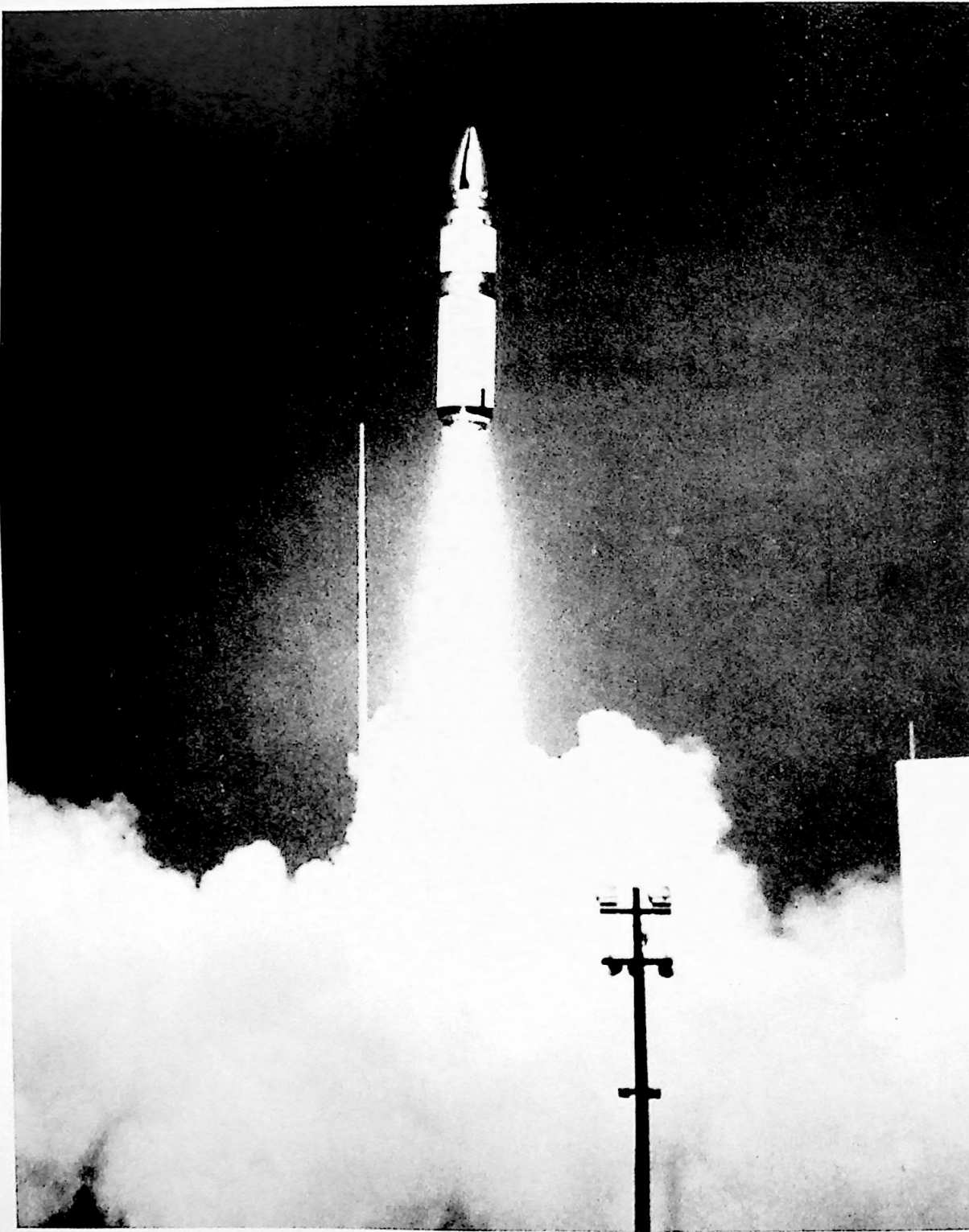
Jul 1968

The U.S. Army awarded Lockheed Missiles & Space Company a production contract for 11 unusual aircraft designated YO-3A. The YO-3A was designed to monitor movements of Viet Cong guerrillas who melted into the dense jungle after striking American forces. To

track guerrillas the YO-3A was equipped with special sensors. To avoid detection it had a glider-like airframe and a heavily muffled engine driving a slow-turning propeller. The resemblance between the YO-3A and gliders was not coincidental. The first two demonstration

aircraft LMSC delivered for tests in Vietnam were Schweizer sailplanes fitted with engines. The YO-3A retired from military service after Vietnam, but was used for civilian missions by state fish and game agencies, NASA, and the FBI.

Poseidon reaches for the skies



Aug 16 1968

The Poseidon ballistic missile was first launched from Cape Canaveral, Fla. Less than three years later, the missile went on operational patrol aboard the U.S. Navy submarine James Madison. The Poseidon carried twice

the payload and had twice the accuracy of its predecessor, the Polaris. Lockheed Missiles & Space Company was program manager for both missiles.

Navy takes aim with Mk 86



Jan 5 1970

The U.S. Navy announced that Lockheed Electronics Company would produce the Mk 86 weapons control system the company had designed and developed. The Mk 86 incorporates radar and optical sensors with computer processing technology to detect and

track targets, automatically compute trajectories, and direct the most effective mix of firepower — be it guns or missiles. It was the first digital weapons control system deployed by the Navy and is now aboard 53 U.S. ships including destroyers, helicopter assault vessels,

and some of the newest nuclear-powered cruisers. Lockheed is now working with the Navy to incorporate the latest electro-optical, infrared, and laser sensors into the system.

Reagan dedicates plant for TriStar



Jul 20 1970

As California governor, Ronald Reagan dedicated Lockheed-California Company's \$55 million aircraft assembly and flight test center in Palmdale, Calif. The plant was built primarily for

the L-1011 TriStar airliner, which Governor Reagan called, "one of the most sophisticated commercial jetliners ever produced by man."

P-3C beats Russian record



Jan 21 1971

A U.S. Navy P-3C Orion took off from Atsugi, Japan, then flew 7,010 miles nonstop over Alaska and Canada and landed 15 hours and 21 minutes later at Patuxent River, Md. The Orion's performance set a world record for distance in the heavy-weight turboprop aircraft class. The

record had previously been held by a Soviet Il-18 aircraft. The Orion's flight established more than a record. It proved that the Navy was capable of performing antisubmarine warfare operations over long distances and periods of time with minimal support.

To insure that the record-breaking P-3C would have enough fuel for its flight, the Navy crew packed its fueling hose with dry ice, above. The cooling made the fuel contract so the Navy could squeeze more into the aircraft's tanks.

TriStar takes off; program nearly falters with Rolls-Royce



Nov 16 1970

The L-1011 TriStar jetliner took off for its first flight. After landing, L-1011 project pilot Hank Dees declared, "It was simply a perfect flight." But the TriStar still had to face rough flying. On February 4, 1971, Rolls-Royce entered receivership.

The company's bankruptcy jeopardized the L-1011, which used Rolls-Royce engines, and therefore threatened the very existence of Lockheed. Lockheed's banks were reluctant to extend the additional credit needed to a company that had a jetliner program, but

no engines. The British government owned an interest in Rolls-Royce, but did not want to continue producing L-1011 engines because of huge cost overruns. Rumors flew that TriStar customers might cancel their orders.

Employees demonstrate support for loan guarantee



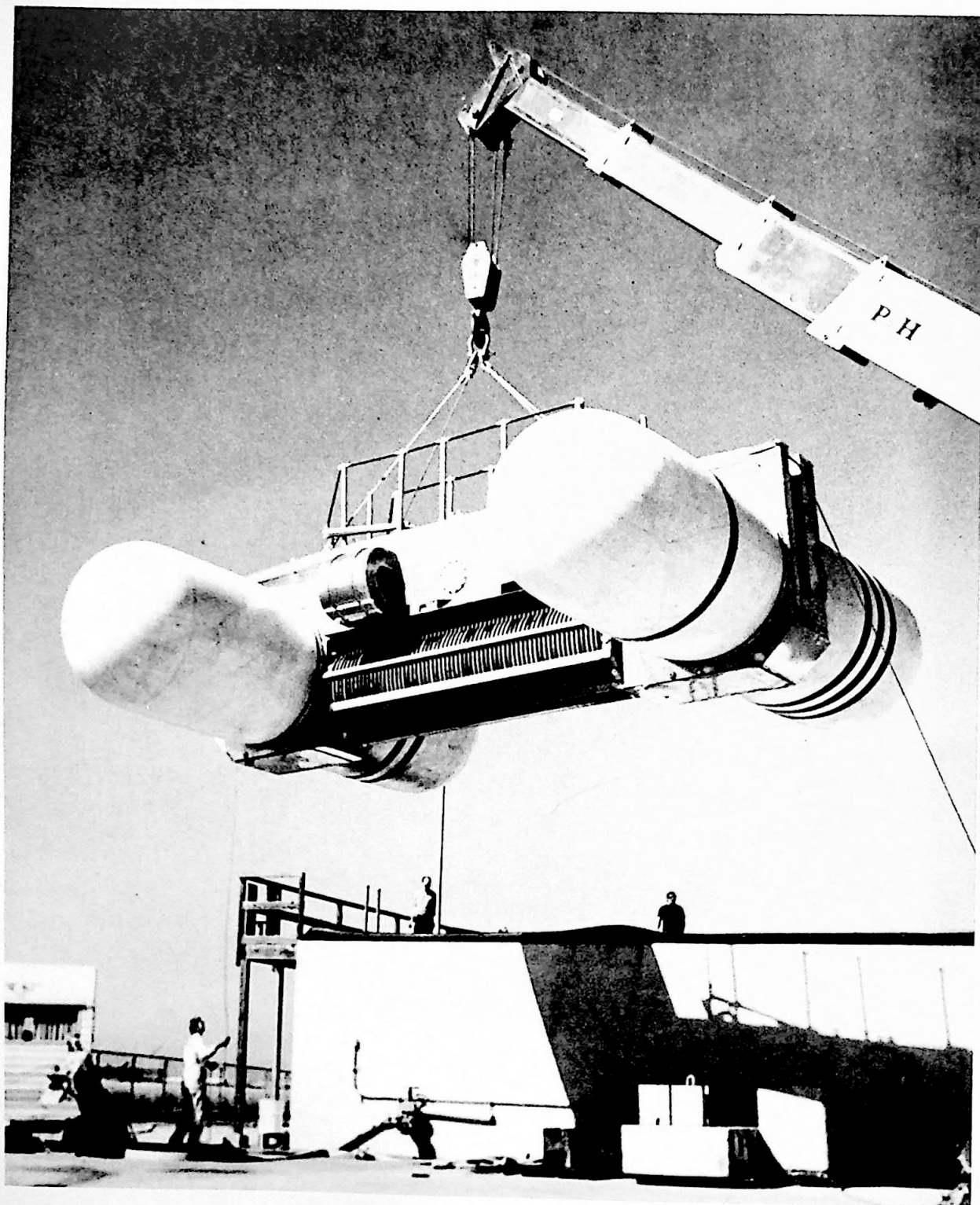
Jun 1971

Rolls-Royce, the British government, and the U.S. banks all agreed to continue the TriStar program if the U.S. government would guarantee additional bank loans to Lockheed. Employees paraded their support at Lockheed locations, such

as LMSC, above. In August the loan guarantee legislation was approved by Congress. The government agreed to guarantee up to \$250 million to be loaned by Lockheed's private banks. With the steady improvement of Lockheed's financial position the guarantee became

unnecessary and was terminated in 1977. In this transaction the government never expended or loaned any money on Lockheed's behalf, and the federal treasury received a \$30 million profit in guarantee fees paid by Lockheed.

Lockheed mops up with Clean Sweep



Jun 1971

The U.S. Coast Guard awarded a contract to Lockheed Missiles & Space Company to develop its Clean Sweep oil recovery design into a system that could be carried by aircraft to oil spills in the open sea. A year later, the Coast Guard asked Lockheed to build a

prototype system, and several agencies and commercial companies ordered smaller versions. Today, Clean Sweep units are used by scores of public and private agencies in 20 countries to mop up oil and debris in bays, lakes, and on open seas. Many units are oper-

ated in industrial settling ponds. Some versions of Clean Sweep are small enough to be carried by one person. Some weigh tons and pick up 1,000 gallons of oil a minute. Above, the Coast Guard prototype is lifted into LMSC's test basin.

Another Lockheed subhunter lifts off



Jan 21 1972

The S-3A Viking carrier-based antisubmarine warfare (ASW) aircraft made its first flight, joining the more than 3,000 ASW aircraft already built for the U.S. Navy by Lockheed. After completing

the one-hour-and-42-minute flight over the Mojave Desert, Lockheed test pilot John Christiansen praised both the aircraft and the California Company's Rye Canyon simulator which prepared him for it. He noted that the Viking's reactions

were within a couple of percentage points of the simulator's. "Generally there is a 10 to 15 percent difference from the simulator, but this flight was amazing."

StarLifters bring POWs home



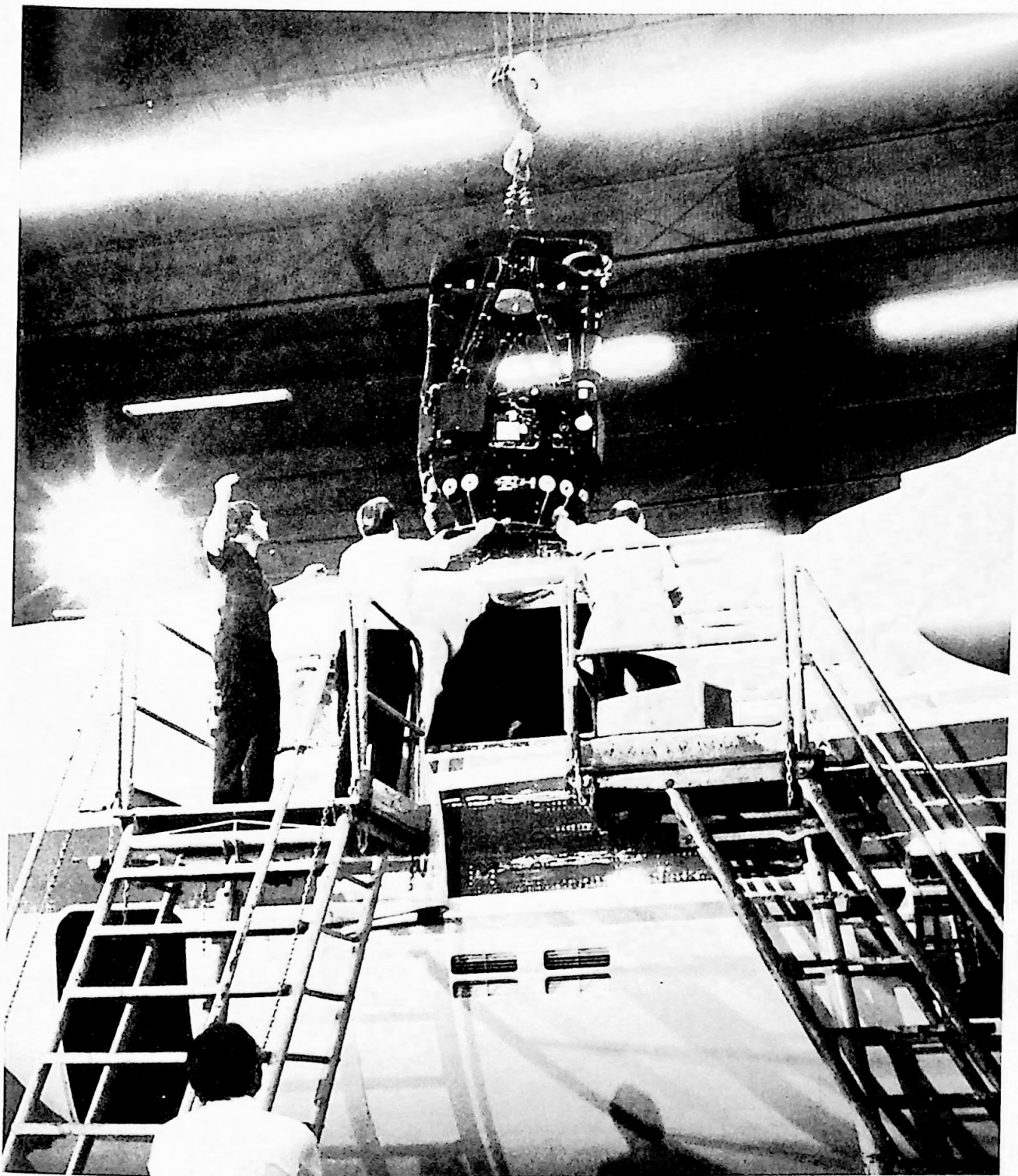
Feb 1973

Three Lockheed-Georgia C-141 StarLifters carried the first of 143 American prisoners of war out of Vietnam. Some of the servicemen had been in prison for

six years. The StarLifters stopped at Clark Air Force Base in the Philippines before completing their journey to the U.S. The first prisoners to step out of the second C-141 landing in the Philippines were U.S. Air Force Col. Robinson Risner,

waving, and U.S. Navy Capt. James B. Stockdale, at the top of the ramp. The uniformed officers are their escorts.

C-141 becomes NASA's eye in the sky



Feb 1973

Lockheed Aircraft Service Company installed a 15,000-pound infrared telescope in a Lockheed C-141 StarLifter, creating a flying observatory for NASA. To adapt the C-141 to carry the telescope,

LAS rebuilt and reinforced 150 square feet of the aircraft's fuselage and installed nearly six and one-half miles of wiring. At an altitude of 45,000 feet, the StarLifter flies above most of the Earth's atmosphere and water vapor, giving scientists

aboard a chance to make infrared observations that are 1,000 times more accurate than those done at ground level.

The flying Good Samaritan



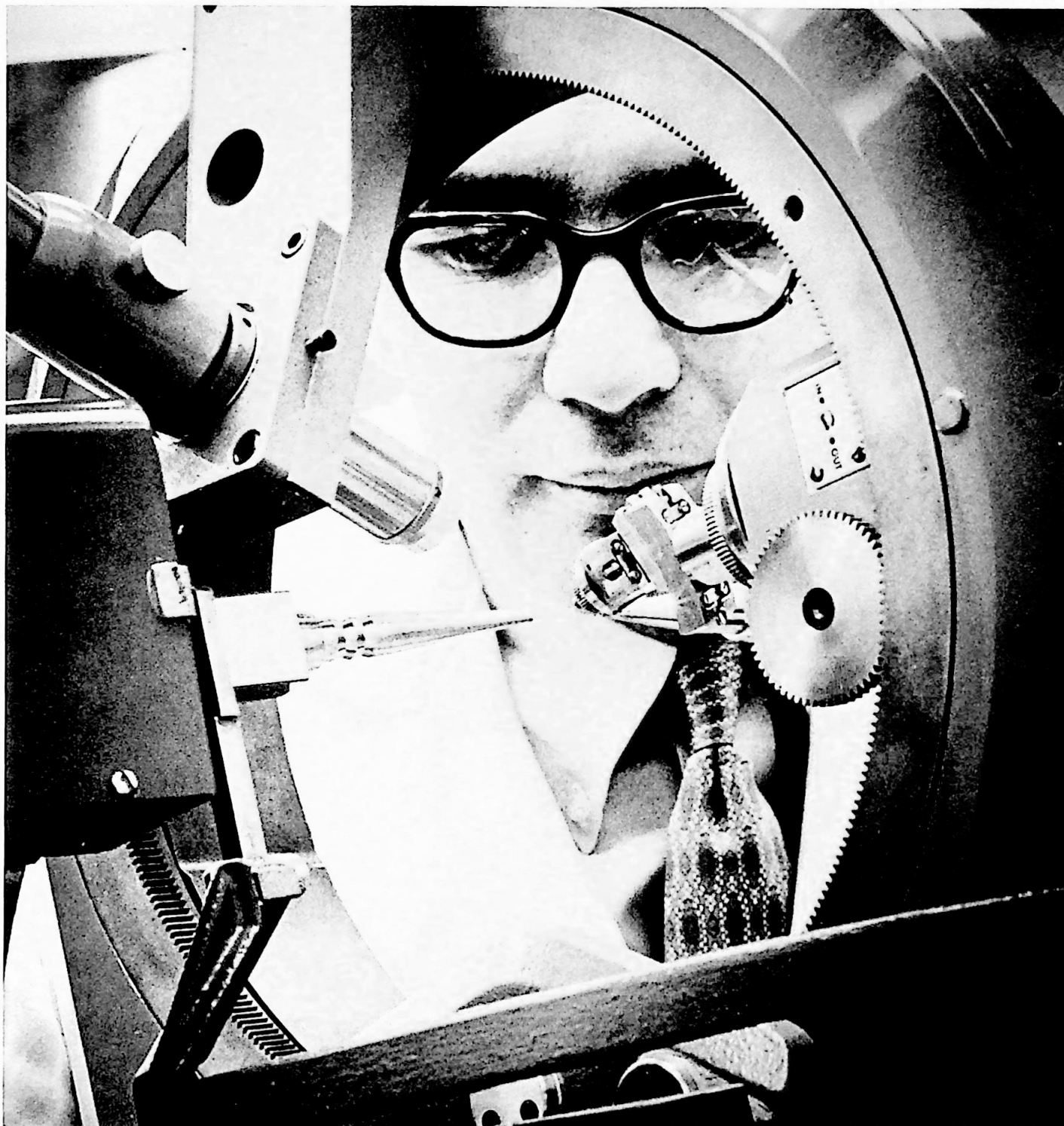
Apr 1973

The kingdom of Nepal faced famine. Many nations donated food, but getting the supplies to 1.5 million villagers in remote areas was a formidable task. The British Royal Air Force tackled the job with C-130 aircraft. The Hercules nimbly negotiated the five-mile-high peaks of

the Himalayas to airdrop food to villages. The only landing spot was the dirt runway at Serkhet, above. Mercy missions are routine for Hercules. C-130 aircraft carried orphans out of war-torn Tibet in 1963; refugees from East Pakistan in 1971; supplies to Chad famine victims

in 1966 and 1969; to Nicaraguan earthquake victims in 1972, and to Australian cyclone victims in 1974. In 1976, Hercules did double duty at the Israeli rescue at Entebbe, carrying commandos in and hostages out of hostile Uganda.

NASA praises moon rock analysis



Apr 1973

NASA presented Lockheed with a group achievement award for its analysis of moon rocks and other lunar samples collected during Apollo missions. Above, a Lockheed employee examines a lunar sample under an X-ray

instrument. The achievement award was given to a division of the Lockheed Electronics Company that was then providing services to NASA. This division became Lockheed Engineering and Management Services Company in 1979. Lockheed-EMSCO provides services to

a number of government agencies. It develops systems to analyze data collected by satellites and aircraft, tests space shuttle components, manages data processing facilities, and helps the U.S. Army test missiles.

C-5 pulls heavy duty in Israeli airlift



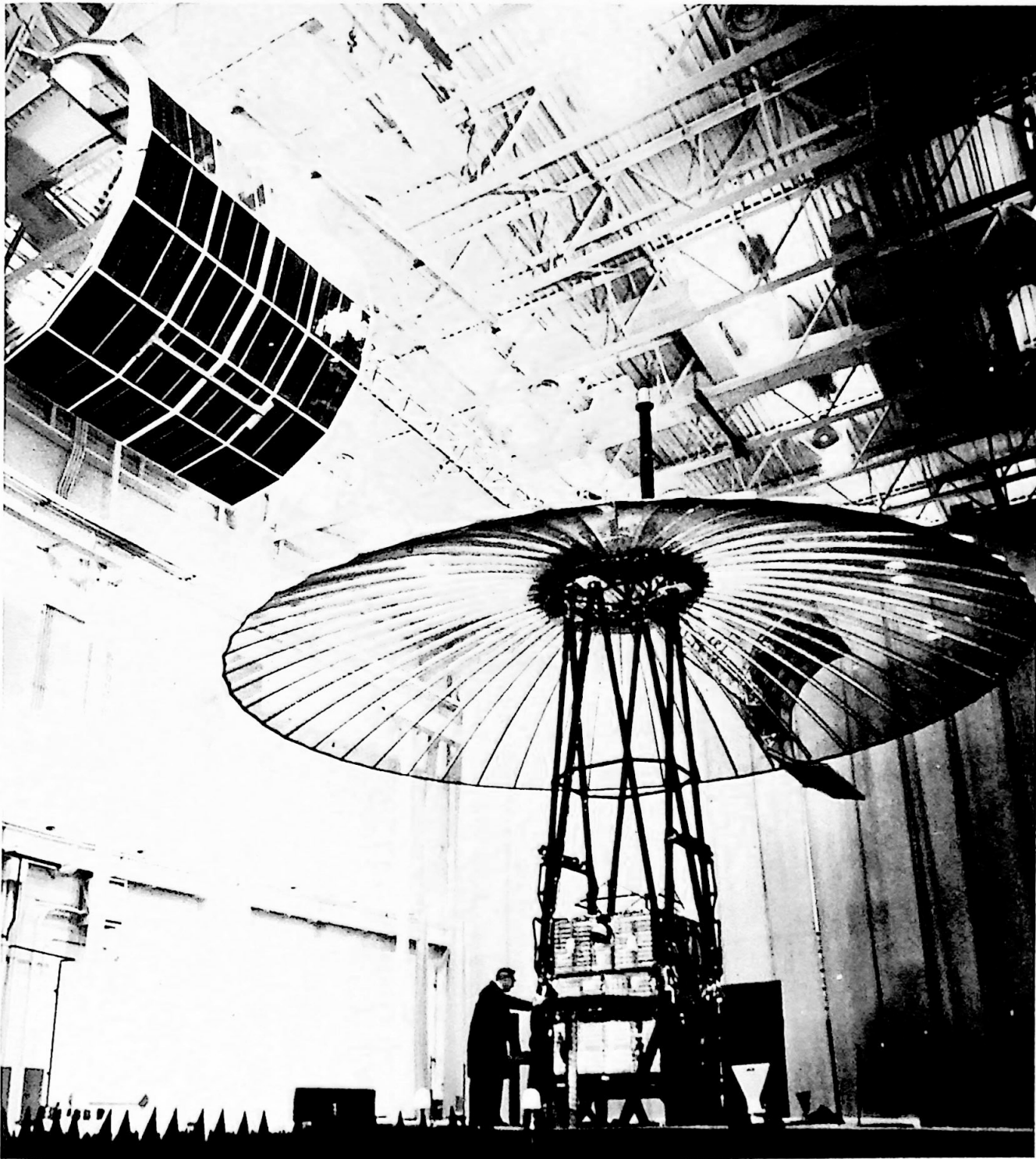
Oct 13 1973

The U.S. Air Force began its most dramatic supply operation since the Berlin Airlift. The destination was Israel. That nation had lost a large portion of its arms in the 1973 Yom Kippur War against opponents who were heavily supplied by the Soviet Union. The U.S. airlift

was designed to even the odds. By the time a cease-fire had been declared, the Air Force had delivered 22,400 tons of supplies in 566 flights. Nearly half of that total was carried by Lockheed C-5 aircraft, and much of the C-5's cargo was heavy or outsize combat equipment.

The C-5 airlifted 50-ton tanks, 30-ton cannons, 25-ton howitzers, parts of aircraft, and entire helicopters. The Reader's Digest said, "If decorations were awarded to airplanes, the C-5 would certainly have earned a Distinguished Flying Cross" for its role in Israel.

Lockheed's space blossom



May 30 1974

NASA's Applications Technology Satellite was launched from Cape Canaveral, Fla., into orbit 22,300 miles above the equator. Lockheed Missiles & Space Company built the satellite's antenna, which had a diameter of 30 feet. For its journey through space,

the antenna's "arms" wrapped around its hub. Once it was in position, an electronic signal cut the cable holding the antenna, and it blossomed open like a flower, above. The antenna helped the spacecraft test a variety of new communications concepts. It broadcast

health and education programs to remote areas around the world, performed aeronautical and maritime communications, and provided spacecraft tracking data.

SR-71 flies faster than a speeding bullet



Sep 1 1974

The Lockheed SR-71 drew crowds at the Farnborough, England, international air show, after setting a speed record enroute. The Blackbird flew to London from New York at speeds faster than the fastest bullet travels, arriving in less than two hours. Returning from the show,

the SR-71 made record time again — about three and three-quarters hours — from London to Los Angeles. The SR-71 has repeatedly proven that it is the world's fastest and highest flying operational aircraft. Three SR-71s set seven world speed and altitude records

on July 27 and 28, 1976. In doing so, they beat three records set by the Russian MiG-25 and four set by their sister ship, the Lockheed YF-12. The U.S. Air Force's Strategic Air Command has been flying Blackbirds for reconnaissance missions since 1966.

C-5 becomes only aircraft to launch an ICBM



Oct 24 1974

A U.S. Air Force C-5 Galaxy became the only aircraft ever to launch an intercontinental ballistic missile when it dropped and ignited a 78,000-pound Minuteman missile over the Pacific Ocean. The Air Force conducted the launch test to see whether its

next generation of intercontinental ballistic missiles could be air-launched. The Lockheed C-5 proved that it could be done, and that a Galaxy needed no structural changes to do it.

Lockheed brings Mars down to Earth



Jul 20 1976

NASA's Viking 1 landed on Mars. Lockheed Electronics Company recorders aboard the spacecraft stored and played back across 200 million miles photographs and millions of bits of information collected on the planet by Viking's instruments. One

of the things recorded by the Lockheed equipment was the first photograph taken by the Viking lander, above. It shows one of the spacecraft's feet standing on the bleak Martian rubble.

LMSC launches another success



Jan 13 1977

A Trident I missile was launched on its maiden flight over the South Atlantic. An official U.S. Navy announcement said, "All major test objectives were met again, attesting to the nation's well-placed confidence in the experienced Navy and contractor Trident development

team . . . " Lockheed Missiles & Space Company used its experience as program manager on the Polaris and Poseidon missiles to springboard to new capabilities with Trident. Trident has three stages, its predecessor had two. With a full payload its range is more than

4,000 miles — 60 percent greater than Poseidon's. It pioneered the use of strong, lightweight graphite composites in missiles. Trident I is now aboard U.S. Navy submarines.

Lockheed reports on foreign payments



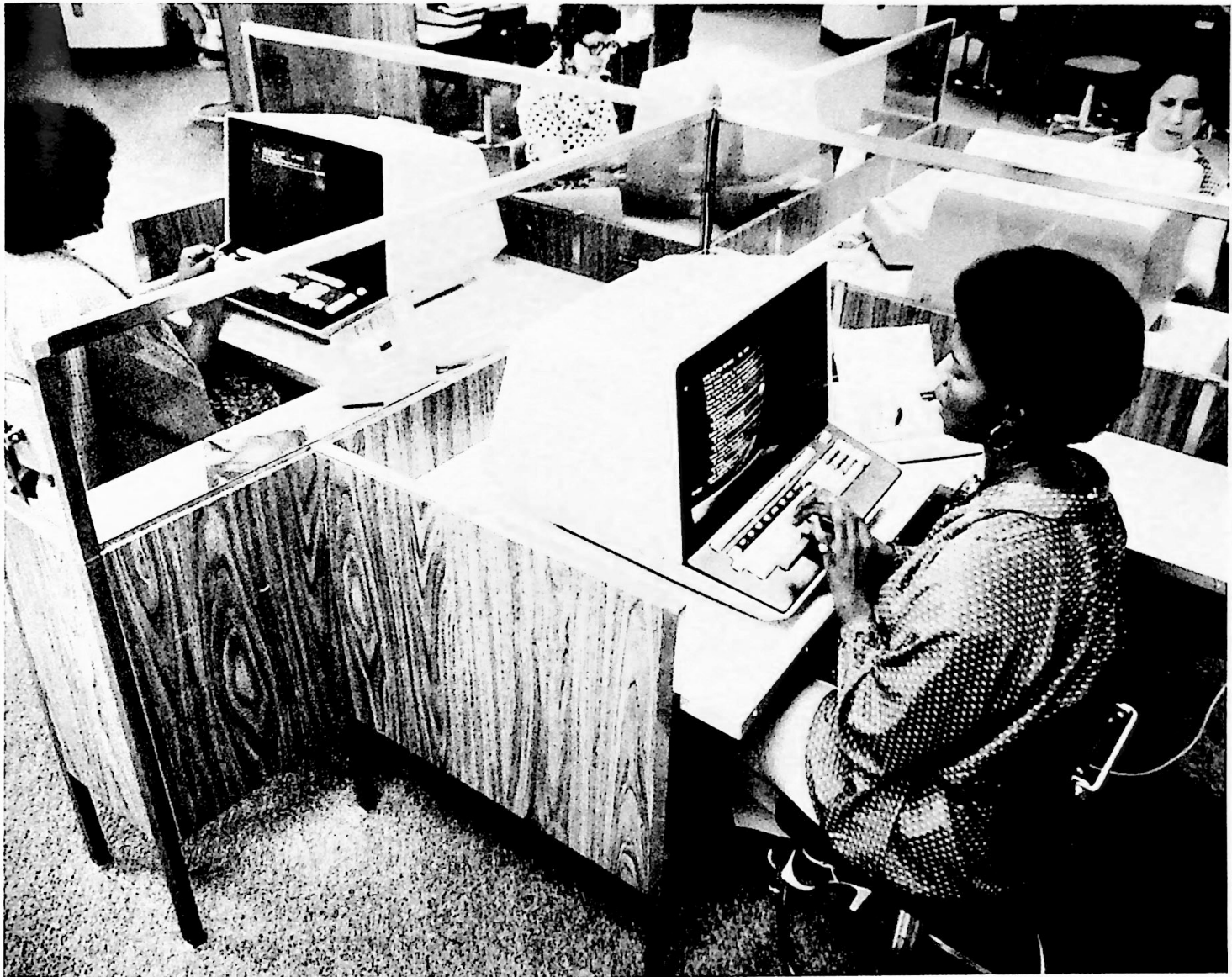
May 6 1977

A special committee of Lockheed's board of directors released its report on Lockheed's payments to foreign consultants. The committee was formed in response to a Securities and Exchange Commission complaint and a Senate subcommittee investigation

into foreign payments by U.S. corporations. The committee's report estimated that the company had made between \$30 million and \$38 million in questionable payments. By the time the report was released, all the practices cited had already been corrected by reforms

passed by the board in 1975 when the payments were discovered. The report recommended additional action, and this was done. Above, J. Wilson Newman, chairman of the committee, and Robert Haack, chairman of the board, discuss the report with the press.

LEC gives operators computerized assistance



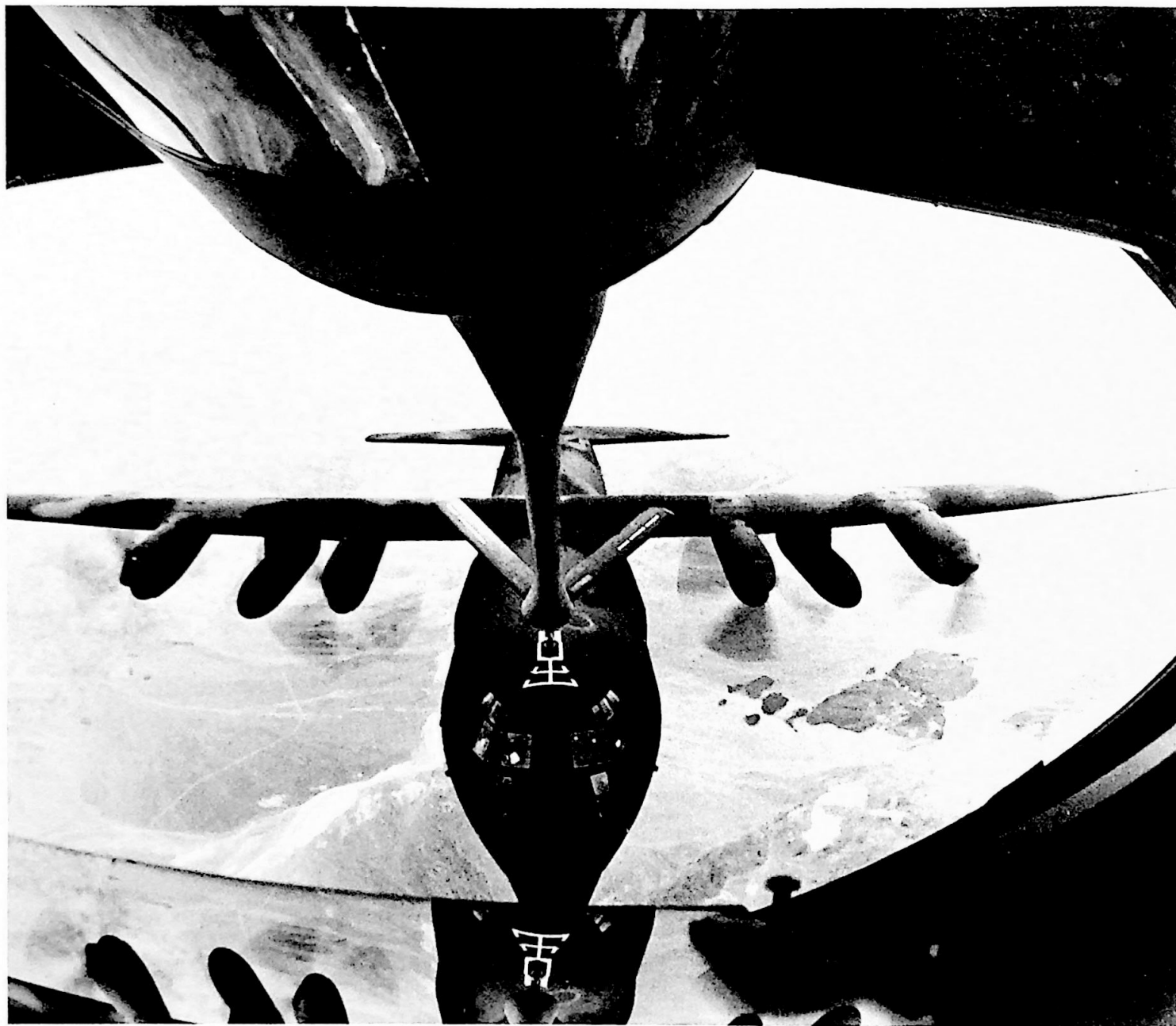
Jun 1977

Lockheed Electronics Company began marketing its computer-based Rapid Access Data Retrieval Unit/Computer. With RADRU/C directory assistance operators provide customers with telephone numbers

in just seconds by making entries on a console keyboard that summons listings to a video screen. Above, directory assistance operators at Michigan Bell Telephone Company use the system. LEC is currently providing the New York Telephone Company with the

largest single computerized directory assistance system in the world. It will process up to a million inquiries daily for 2,000 operators at 33 directory assistance bureaus. Installation will be completed in March 1983.

Hercules flies 27 hours nonstop



Aug 18 1977

The U.S. Air Force announced that a C-130 had stayed aloft for 27 hours and 45 minutes, the longest period a Hercules had been airborne up to that time. The record was made possible by the installation of inflight refueling. Lockheed Aircraft Service, working with

the Air Force, designed and installed the system. Receiving inflight refueling signaled a turnabout for the Hercules, which, in its tanker configuration, had been refueling other aircraft for years. To set its inflight record, the Hercules was refueled three times, twice during the night.

C-130 aircraft equipped with refueling can take off with heavier than normal cargo loads, but less than maximum amounts of fuel, and fly greater distances without landing to refuel.

Lockheed sells airport, continues airport services



Mar 31 1978

Lockheed President Larry Kitchen signed a contract to sell the Hollywood-Burbank Airport to the Hollywood-Burbank Authority. William Rudell, president of the authority, seated at right, had already signed the agreement. Lockheed bought the airport,

then known as Union Air Terminal, in 1940, and changed its name to Lockheed Air Terminal. From the company's operation of the airport grew the Lockheed Air Terminal subsidiary that today provides ground support and fueling services to nearly 100 airlines and

cargo carriers at 26 airports in the U.S. and overseas. Lockheed Air Terminal's ties with its original location continue. Lockheed Air Terminal manages operations of the southern California facility, now named Burbank-Glendale-Pasadena Airport, for the three-city authority.

Dash 500 TriStar receives royal rollout



Oct 12 1978

The Dash 500 long range version of the L-1011 TriStar was christened by Britain's Princess Margaret in rollout ceremonies at Palmdale, Calif. Escorting her were Lockheed Chairman Roy

Anderson, next to the princess, above, and Ross Stainton, chief executive of British Airways. The L-1011 is widely recognized as the most technologically advanced airliner in the skies. But in December 1981, Lockheed decided to phase

out production of the TriStar because of severely depressed airline industry economic conditions that showed no sign of improving.

Aurora — dawn of then largest export sale



Jan 25 1979

A fanfare of Canadian bagpipes greeted the rollout of the CP-140 Aurora maritime patrol aircraft at the Lockheed-California Company. The Aurora combines the airframe and engines of the P-3C Orion with the advanced electron-

ics of the S-3A Viking. It can perform a range of civilian and military missions from antisubmarine warfare and shipping and fisheries surveillance to search and rescue operations. When the \$697 million sale of 18 Auroras to Canada was announced in 1976, it was, in

dollar amount, the largest foreign order in the corporation's history. But the sale of 250 Hudson bombers to Britain in 1938 remains the largest single foreign sale in terms of the number of aircraft sold.

LMSC sub makes underwater rescue



May 1979

Lockheed's Deep Submergence Rescue Vehicle made history by proving that personnel could be transferred between submerged submarines. The U.S. Navy-operated DSRV, Avalon, dived under the Atlantic Ocean from a nuclear-

powered British sub, docked with the British diesel submarine, Odin, and took members of the Odin's crew on board in a simulated rescue off the coast of Scotland. Lockheed C-5 and C-141 aircraft flew the DSRV to Scotland where it was cradled on the deck of the

British submarine, Repulse, shortly before the "rescue," above. Lockheed Missiles & Space Company built two DSRVs for the U.S. Navy. The Navy started planning for the small submarine after the loss of its submarine, Thresher, in 1963.

Lockheed brings power from the deep



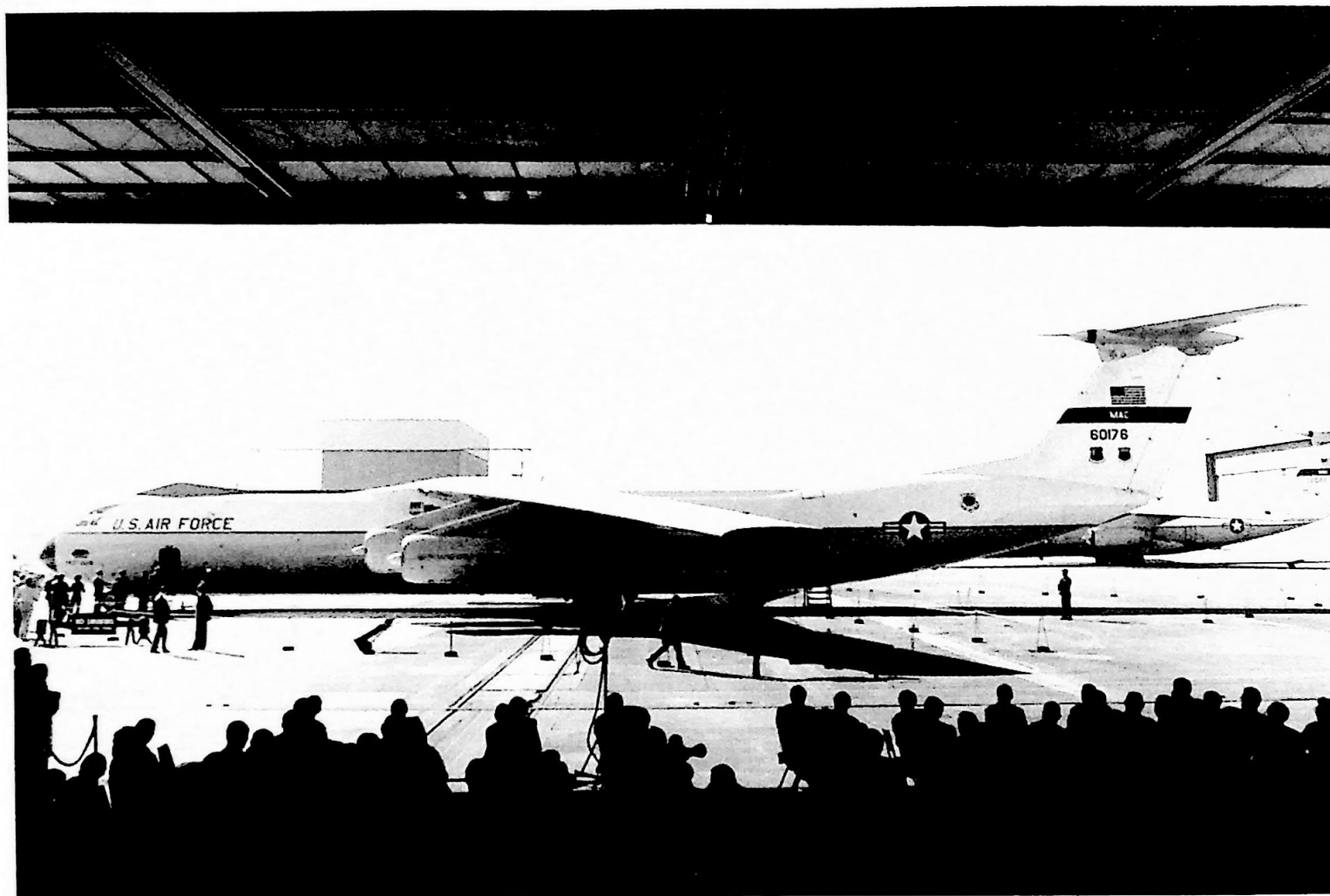
Aug 2 1979

A state/industry team led by Lockheed Missiles & Space Company proved the feasibility of converting thermal energy from the ocean to electricity with a Mini-OTEC (Ocean Thermal Energy Conversion) plant on a barge

off the coast of Hawaii. Over a three-month period the plant generated gross power levels of up to 50 kilowatts. The National Society of Professional Engineers named this one of the ten most outstanding engineering achievements of 1979. Other Lockheed energy

projects have included Dam-Atoll, a system for harnessing the motion of ocean waves to drive energy-producing turbines, and large solar arrays for space vehicles.

Lockheed stretches C-141, shrinks budget and schedule



Dec 4 1979

Lockheed-Georgia turned over the first "stretched" C-141B StarLifter to the U.S. Air Force. On June 29, 1982, the company delivered the last of 270 modified StarLifters — ahead of schedule and \$25 million

under budget. Lockheed added two fuselage plugs to increase the airlifter's cargo capacity by more than 2,000 cubic feet and installed inflight refueling capability. General James R. Allen, commander-in-chief of the Military Airlift Command, said the stretch program

increased fleet productivity by 40 percent and represented "a bargain for the nation, a bargain for the Air Force, and a bargain for the taxpayers."

Shipyard delivers subtender and savings

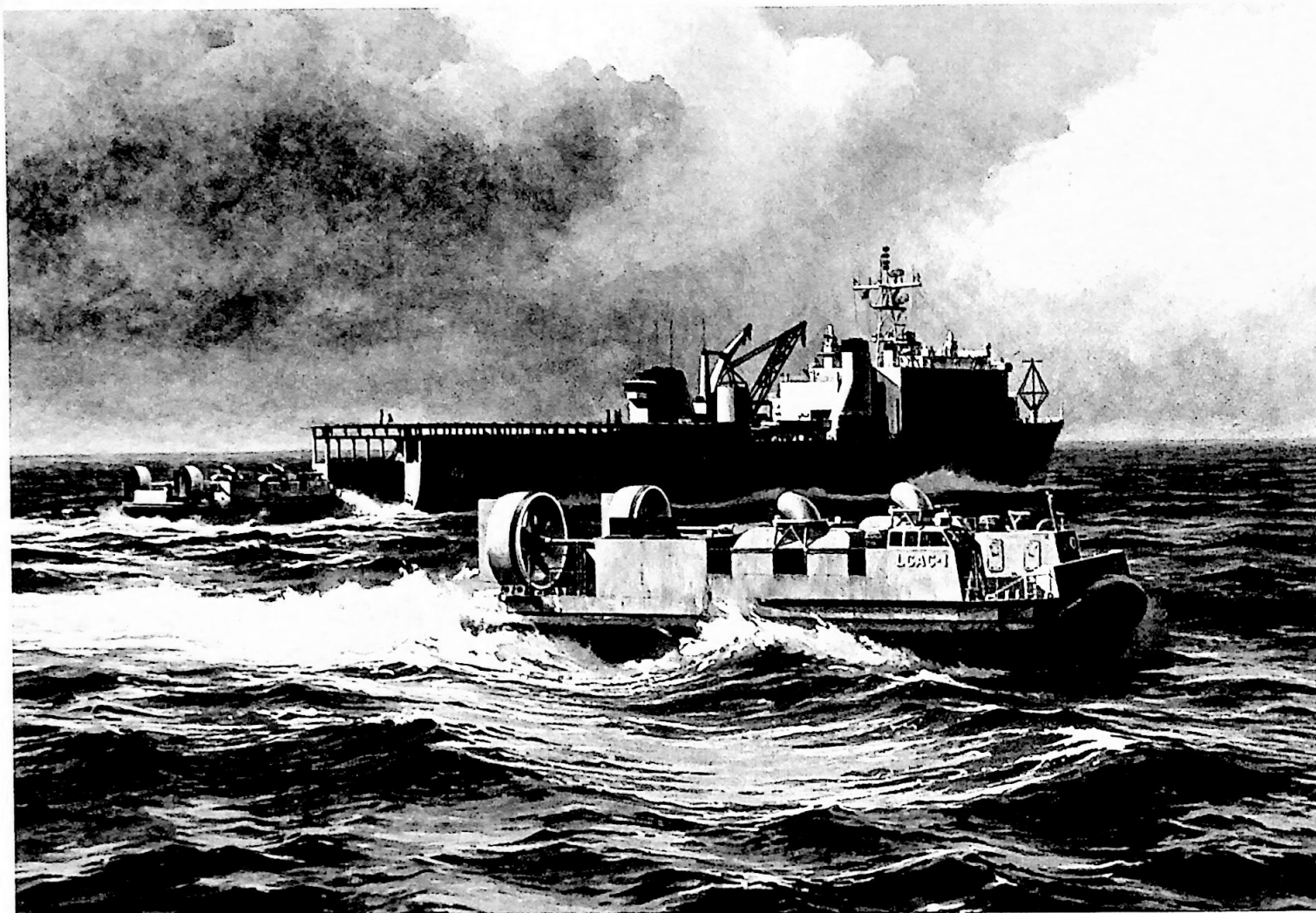


Feb 16 1980

Lockheed Shipbuilding and Construction Company launched its 44th ship, the submarine tender USS McKee. Eighteen months later, the company delivered the McKee to the U.S. Navy ahead of schedule and under budget. McKee and two other subtenders built by

Lockheed, the USS Frank Cable and the USS Emory S. Land, represent an investment of more than half a billion dollars. All three ships support nuclear-powered Los Angeles-class attack submarines.

Lockheed designs, builds new class of ship



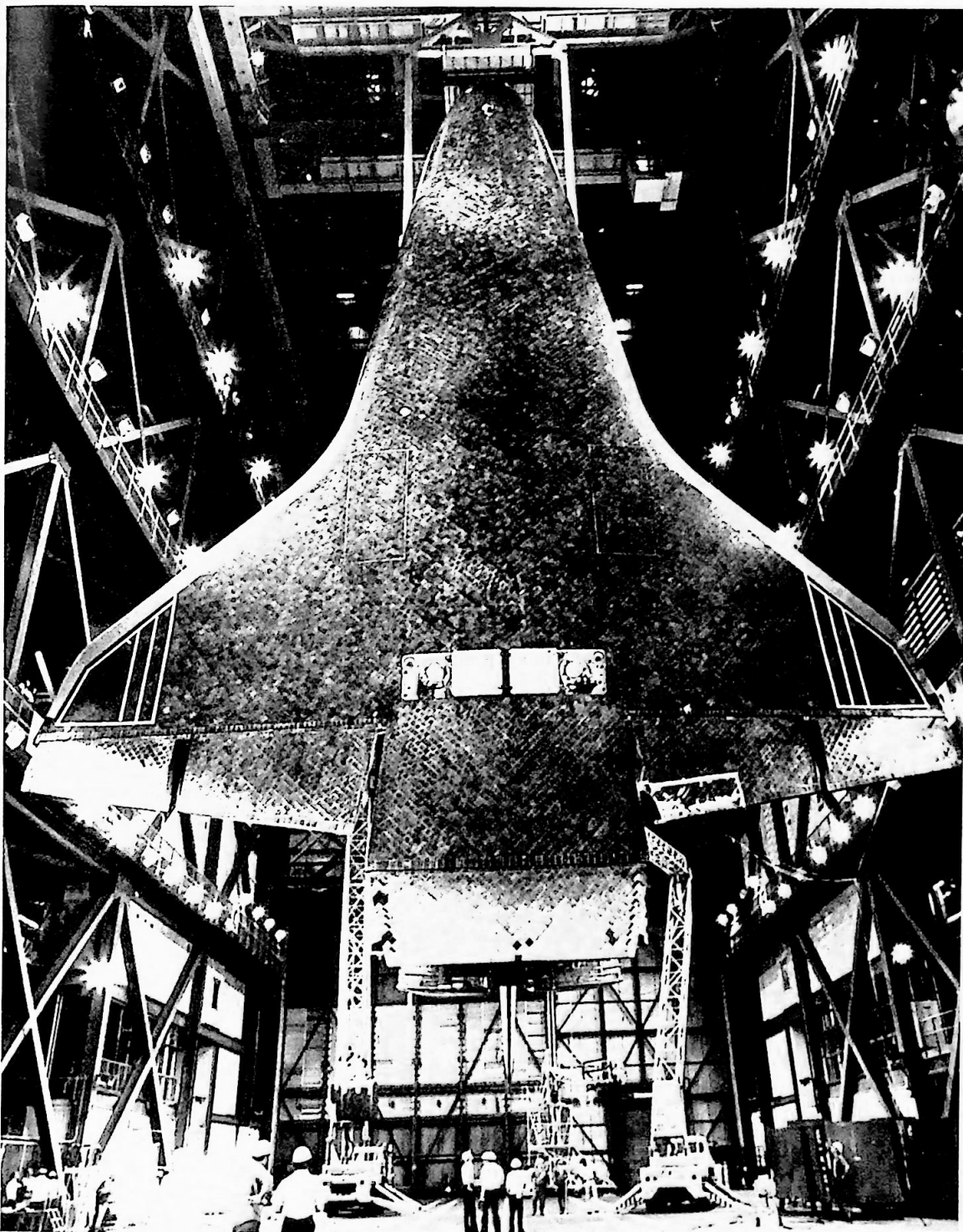
Feb 10 1981

The U.S. Navy awarded Lockheed Shipbuilding and Construction Company a contract for an amphibious assault ship named Whidbey Island, which is the first of a new class of dock landing

ships designed by Lockheed. A year later, Lockheed was selected to build a second ship of the class. These ships house and launch four air cushion landing craft, which carry U.S. Marines and their equipment from the dock landing ship to their destination on shore. This

artist's conception shows the Lockheed ship with two air cushion landing craft. The landing craft are built by Bell Aerospace Division of Textron Inc.

Thermal blanket for Columbia



Apr 14 1981

NASA's space shuttle Columbia safely landed at Edwards Air Force Base, Calif., after orbiting the Earth for two days. As the shuttle sped back through Earth's atmosphere it braved temperatures as high as 2,300 degrees Fahrenheit.

But the shuttle and its crew were protected from the searing heat by thousands of silica tiles developed and produced by Lockheed Missiles & Space Company. These covered 70 percent of the shuttle's surface. Each thermal tile was milled to a

to smoothly fit Columbia's contours. Above, most of the tiles can be seen as the space shuttle orbiter hangs inside Kennedy Space Center, Fla.

Successor of U-2 unveiled



Jul 15 1981

Lockheed-California Company rolled out its newest tactical reconnaissance aircraft, the TR-1 — an improved, larger version of Lockheed's famous U-2. Like

the U-2, it can fly at extremely high altitudes, and its sensors can record several hundred miles worth of data at a time. Lockheed is producing the TR-1 for the U.S. Air Force. For NASA, Lockheed built a similar aircraft, the ER-2, which is used

in studying Earth's geological, agricultural, and forestry resources, and to sample the Earth's upper atmosphere.

LMSC probes another deep subject



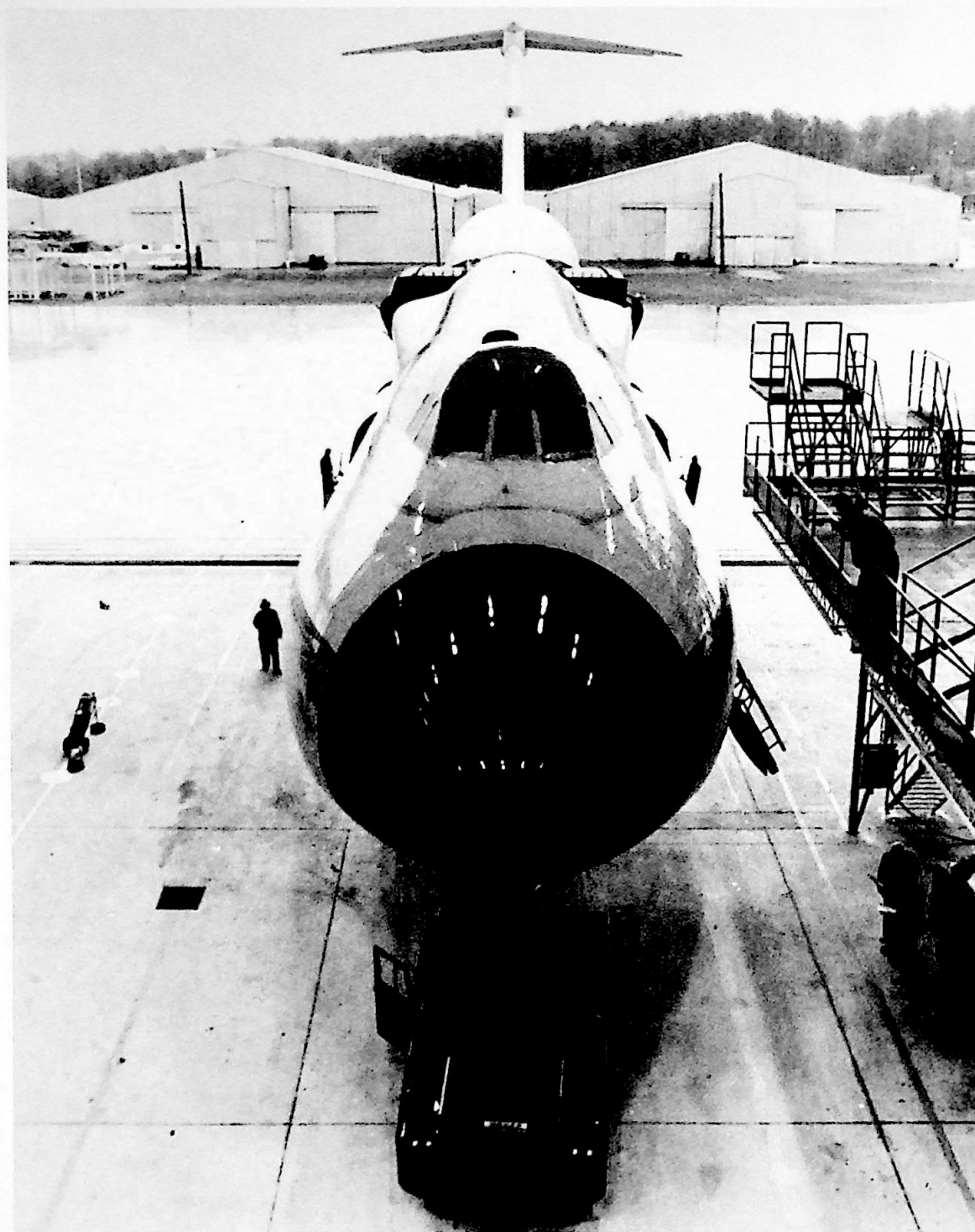
Nov 1981

The National Science Foundation selected Lockheed as systems integrator for its Advanced Ocean Drilling Program to obtain ocean floor cores using a pipe string 33,200

feet long. These samples are expected to give scientists insight into the history and formation of Earth. Lockheed plans to modify the Glomar Explorer to serve as the platform for a six-mile-long drill string. Lockheed, as part of the Ocean Minerals

Company consortium, used the Glomar Explorer (above) in 1979-1980 to demonstrate a method of recovering manganese nodules from the ocean bottom.

Galaxy sprouts new wings



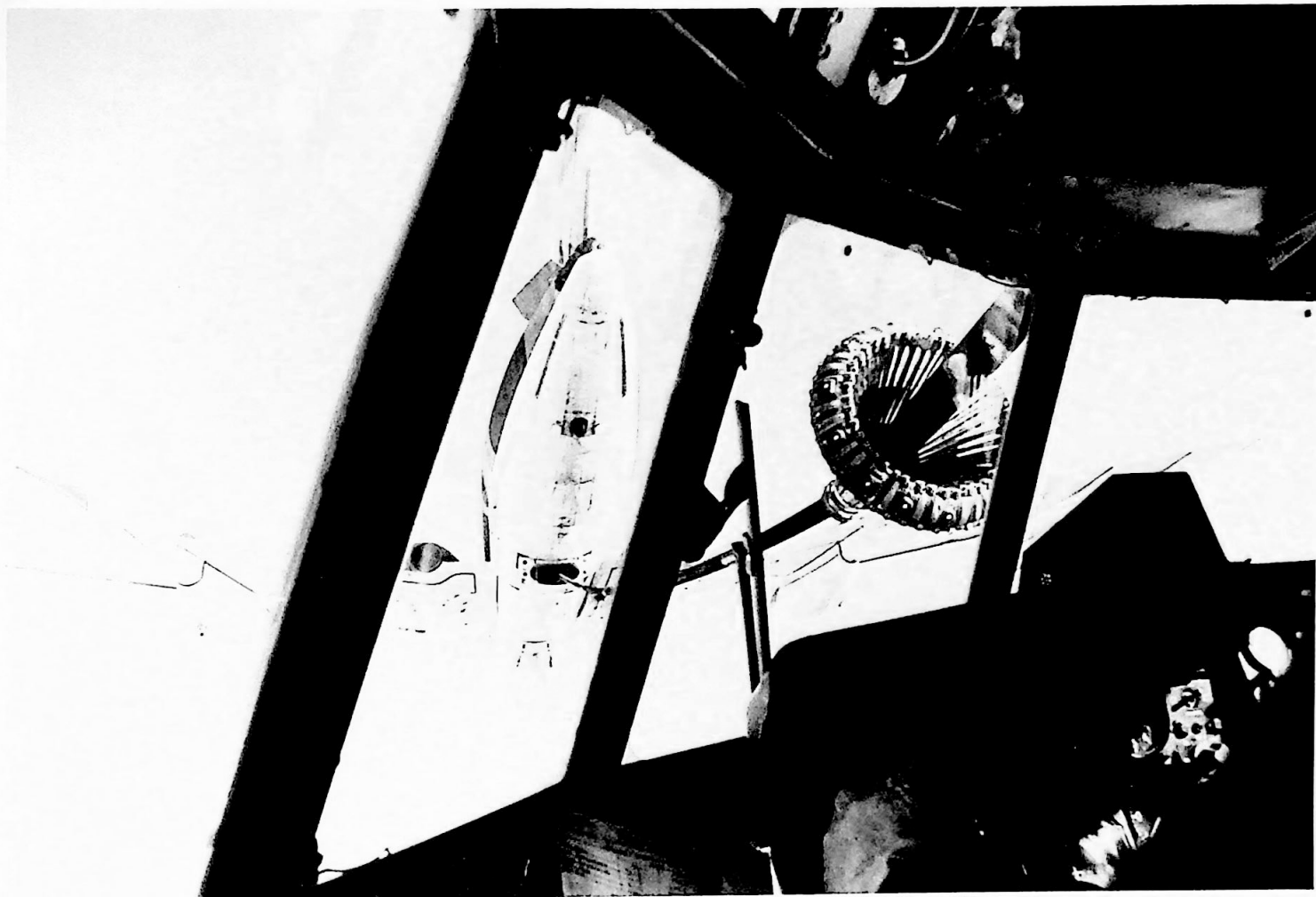
Feb 1982

Lockheed-Georgia began working on the first production C-5 Galaxy to arrive at the company for re-winging. Lockheed-Georgia is installing new wings on the

U.S. Air Force's entire fleet of 77 C-5 airlifters. Lockheed began designing the new wings in 1976 under an Air Force contract. They have been tested for over 100,000 flight hours, more than three times the normal service life of the Galaxy. Because of this modification C-5s will be

flying well into the next century. Above, a Galaxy awaits new wings after the old ones have been removed.

Veteran Hercules recalled to action



Jun 1982

Fighting stopped between the British and Argentine forces in the Falkland Islands after the British captured the island capital of Stanley. But there was no relief for the British Royal Air Force C-130s. During the conflict

they had carried supplies from Britain to the Ascension Island staging area, and then air-dropped spare parts to British forces on Falkland Island beaches. But the demands on Hercules continued after the British captured Stanley: C-130s flew the nearly 4,000 miles

from Ascension Island to the Falklands every day. When weather closed the bomb-scarred Stanley runway, the Hercules transports air-dropped their cargo. Above, a RAF C-130 is refueled by a Victor tanker.

Aquila gives Army eagle's-eye view



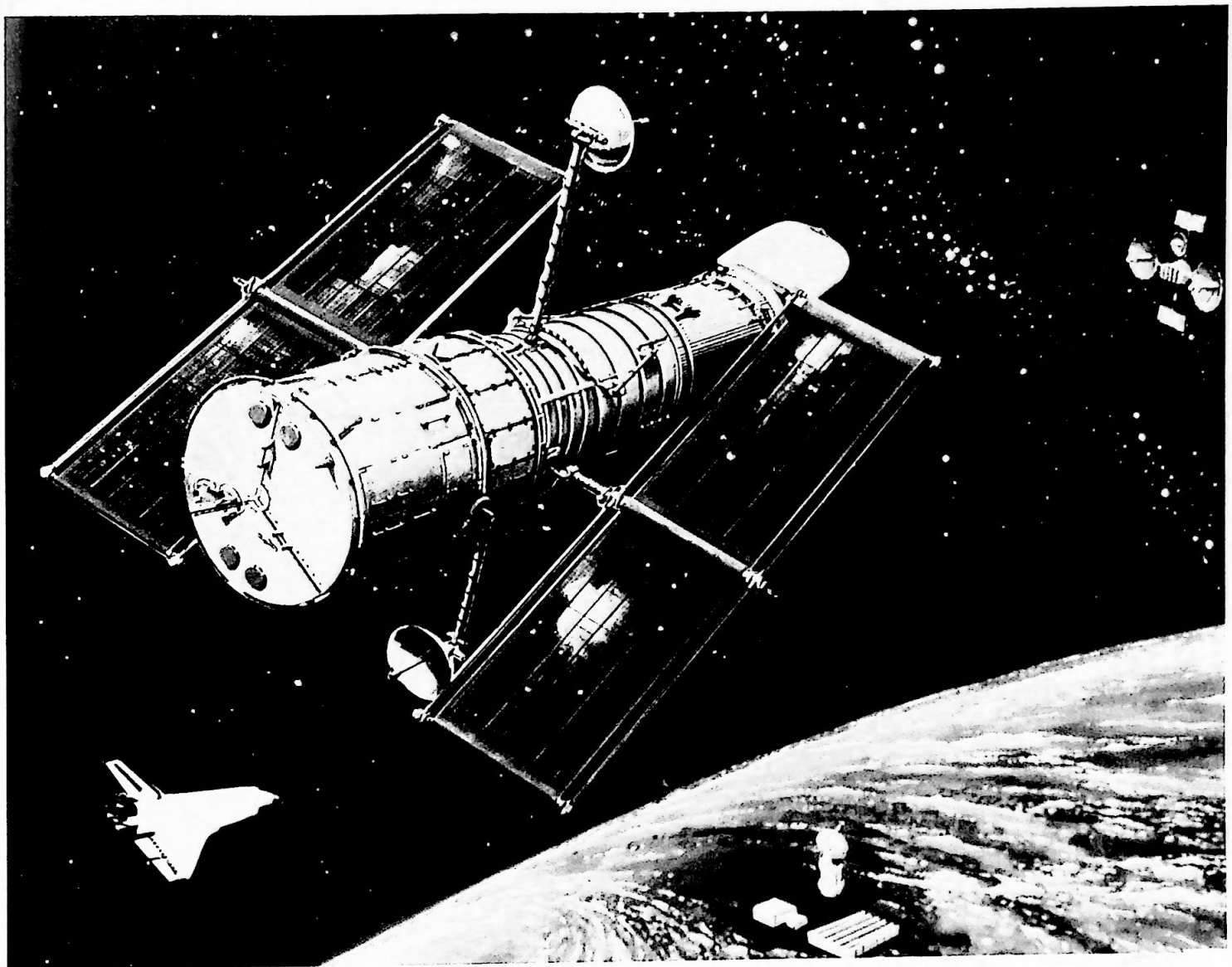
Jul 16 1982

The Lockheed Aquila remotely piloted vehicle successfully completed its first field test. Launched from a rail catapult, it flew for 40 minutes on a computer-programmed course and returned to its recovery net.

The Aquila is designed to fly behind enemy lines and send back live television pictures of enemy armor and other targets, responding to its own programming or to commands from a ground controller. During its flight it can also laser-designate targets for artillery and

guided weapons. LMSC is building the Aquila for the U.S. Army. The Aquila is one of the programs LMSC is considering moving to its new Austin, Texas facilities.

A long look into space



Jan 1982

Lockheed Missiles & Space Company began full-scale production of the support systems module of NASA's space telescope. This is the basic structure of the instrument. NASA will launch the

telescope from the space shuttle in 1985. The telescope will orbit far above Earth's atmosphere, enabling scientists to look seven times deeper into space than was ever before possible. They will see objects one-fiftieth as bright, and view them with

ten times better resolution than is possible with ground-based telescopes. Lockheed has been working on the telescope, shown in this artist's conception, since 1977.

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Photography credits

Many of the events in this book would have gone unrecorded without the keen eyes and quick reflexes of Lockheed staff photographers. Thanks to them, what was all in their day's work is now our cherished history.

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Over time, the sources of some of the photographs in this book have been lost. If we have omitted proper attribution, we regret it.

*Lockheed Corporate Communications
Burbank, California
October 1982*

